



8/8/2018

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

Regarding: Notice of Exempt Modification – Antenna Swap
Property Address: 181-1 Research Drive, Milford, CT
AT&T Site: CTL02169 / FA: 10035075

Dear Ms. Bachman:

On behalf of AT&T, please accept this application 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) (2).

AT&T currently maintains a wireless telecommunications facility on an existing monopole at the above-referenced address. American Tower, Inc. owns said facility. The site consists of nine (9) wireless telecommunication antennas at an antenna centerline height of 167-feet on an existing 185-foot monopole tower. AT&T now intends to retain (3) Powerwave 7770, (3) CCI OPA-65R-LCUU-H4, and (3) Quintel QS66512-2 panel antennas, while installing three (3) Kathrein 800-10964 panel antennas on position 3, all sectors (for a total of (12) panel antennas), at the 167-foot level. AT&T also intends to install three (3) RRUS-B14 4478, (3) RRUS 4478 B5, (3) RRUS-4478 B5, (1) DC/Fiber Surge Suppression dome, and (6) low band combiners on the existing antenna masts.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Benjamin G. Blake, Mayor of the City of Milford, Stephen Harris, Zoning Enforcement Officer of the City of Milford, and American Tower, Inc., Tower and Property Owner.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 167-foot level of the 185-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A



cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included,

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included).

For the foregoing reasons, AT&T 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) (2).

Sincerely,

A handwritten signature in black ink, appearing to read 'Ryan Lynch'.

Ryan Lynch
Real Estate Specialist | Smartlink, LLC
85 Rangeway Road, Building 3, Suite 102
North Billerica, MA 01862

Enclosures

CC w/ enclosures:

Benjamin G. Blake, Mayor of the City of Milford
Stephen Harris, Zoning Enforcement Officer, City of Milford
American Tower, Inc., Tower and Property Owner

Ryan Lynch

From: TrackingUpdates@fedex.com
Sent: Thursday, August 9, 2018 10:00 AM
To: Ryan Lynch
Subject: FedEx Shipment 772925357313 Delivered

Your package has been delivered

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Ship date:
Wed, 8/8/2018

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US



Delivery date:
Thu, 8/9/2018 9:52 am

ATTN: Zoning Department
American Tower Corporation
10 Presidential Way
WOBURN, MA 01801
US



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	772925357313
Status:	Delivered: 08/09/2018 09:52 AM Signed for By: C.ARENA
Signed for by:	C.ARENA
Delivery location:	WOBURN, MA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx 2Day®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	8/10/2018 by 4:30 pm

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Ship date:
Wed, 8/8/2018

Delivery date:
Fri, 8/10/2018 12:22 pm

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US



Delivered

ATTN: Mayor Benjamin Blake
City of Milford
110 River St
MILFORD, CT 06460
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	772925412777
Status:	Delivered: 08/10/2018 12:22 PM Signed for By: S.FOURNIER
Signed for by:	S.FOURNIER
Delivery location:	MILFORD, CT
Delivered to:	Receptionist/Front Desk
Service type:	FedEx 2Day®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	8/10/2018 by 4:30 pm

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Tracking # 772925437233

Ship date:
Wed, 8/8/2018

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US



Delivery date:
Fri, 8/10/2018 12:14 pm

ATTN: Stephen H. Harris,
ZEO
City of Milford
70 West River St
MILFORD, CT 06460
US



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	772925437233
Status:	Delivered: 08/10/2018 12:14 PM Signed for By: M.GREENE
Signed for by:	M.GREENE
Delivery location:	MILFORD, CT
Delivered to:	Receptionist/Front Desk
Service type:	FedEx 2Day®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	8/10/2018 by 4:30 pm

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 11:17 AM CDT on 08/10/2018.

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Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

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Thank you for your business.

181-1 RESEARCH DR #CELL

Location 181-1 RESEARCH DR #CELL

Mblu 91/ 807/ 13A7/1 /

Acct# 023046

Owner AMERICAN TOWER

Assessment \$322,730

Appraisal \$461,050

PID 100283

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$461,050	\$0	\$461,050

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$322,730	\$0	\$322,730

Owner of Record

Owner AMERICAN TOWER
Other C/O PROPERTY TAX DEPT
Address P O BOX 723597
ATLANTA, GA 31139

Sale Price \$425,000
Certificate
Book & Page 03366/0163
Sale Date 06/29/2010
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
AMERICAN TOWER	\$425,000		03366/0163	00	06/29/2010
DAMATO INVESTMENTS LLC	\$0		02289/0578		07/08/1998
DAMATO JOHN C JR &	\$587,500		01942/0499		12/31/1992

Building Information

Building 1 : Section 1

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

Building Attributes

Field	Description
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Description:	
Kitchen Descrip:	
Int Condition:	
Solar Panels	
House Generator	

Building Photo



(<http://images.vgsi.com/photos/MilfordCTPhotos//default.jpg>)

Building Layout

 Building Layout

(<http://images.vgsi.com/photos/MilfordCTPhotos//Sketches/1002>)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 434V
Description CELL TOWER MDL-00
Zone
Neighborhood F

Land Line Valuation

Size (Acres) 0
Frontage
Depth
Assessed Value \$0

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CEL1	CEL TWR SITE			1 UNITS	\$450,000	1
PAT2	PATIO-GOOD			943 S.F.	\$9,620	1
FN8	W/O TOP RL-6'			182 L.F.	\$1,430	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$461,050	\$0	\$461,050
2016	\$461,050	\$0	\$461,050
2013	\$461,050	\$0	\$461,050

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$322,730	\$0	\$322,730
2016	\$322,730	\$0	\$322,730
2013	\$322,730	\$0	\$322,730

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City of Milford, Connecticut

APPLICATION FOR ZONING PERMIT

INSTRUCTIONS: Fill out this application in ball point pen. A scaled plot plan in duplicate, based on a certified surveyor's plot plan must be submitted with this application showing the proposed or existing lot and building dimensions and the location of all buildings in relation to the street lines, side lot lines and rear lot lines.

ADDRESS OF PROPERTY 185 Research Drive ZONE G.I.

MAP _____ BLOCK _____ PARCEL _____ LOT NO. 607 ADDRESS MAP NO. _____ LOT SIZE _____
WIDTH OF STREET RIGHT OF WAY LESS THAN 50 FT.? YES _____ NO CORNER LOT? YES NO _____

IS ANY PORTION OF THE LOT BELOW REGULATORY FLOOD ELEVATION? YES _____ NO

CITY WATER NA PRIVATE WELL* _____ SEWER** NA SEPTIC*** _____ ENG. O.S. PERMIT NO. NA

OWNER John C. D'Amato Jr. Trustee leased to Smart SMR of New York Inc

ADDRESS OF OWNER 147 Research Dr. Milford 575 Corporate Dr. Suite 402
Street City Mahwah, NJ State 07430

PRESENT USE OF PROPERTY 4 Industrial buildings

PROPOSED CONSTRUCTION: NEW ADDITION _____ ALTERATION _____ REPAIR _____

SIZE/USE OF PROPOSED CONSTRUCTION install mobile radio transmission cellular tower facility
tower base 4' tapers to 0'. 185' monopole with antenna array which will not
extend more than 14' additional height

NO. OF STORIES _____ HEIGHT _____ REQUIRED PARKING SPACES _____ LOT COVERAGE _____ %

DATE OF: ZBA APPROVAL Oct 12, 93 CASPR APPROVAL _____ EXEMPTION ISSUED _____

SITE PLAN APPROVAL _____ SPECIAL PERMIT APPROVAL _____ SUBD. REQUIRED YES _____ NO _____

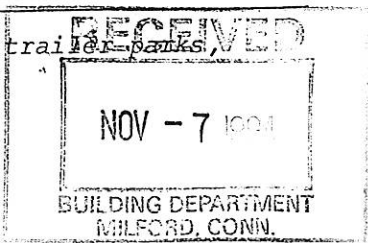
CERTIFICATION: (WARNING) I hereby certify that I am making this application on behalf of and with full authority of the owner of the property and that I am aware of the Zoning Regulations pertinent in this case and that the statements made herein are true and correct. APPROVAL SHALL BE VALID FOR PLANS AS SUBMITTED.

THE OCCUPANCY AND USE OF LAND AND BUILDINGS OR STRUCTURES PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY IS PROHIBITED.

APPROVED BY:
Richard Vaccaro
Zoning Enforcement Officer
Date Issued 10/26/94

APPLICANTS'S NAME PETER FILATOV
(Please print)
APPLICANT'S SIGNATURE _____
ADDRESS ONE N BROADWAY 2ND FL.
CITY MILFORD Street STATE N.J.
TEL. NO. 914-998-4316

*Permit required from State Health Dept. for apartments, subdivisions, shopping centers and public buildings.
** Permits for sewer connections are granted by Sewer Commission.
*** Septic system approvals are granted by Health Department.





8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**Smartlink on behalf of
AT&T Mobility, LLC
Site FA – 10035075
Site ID – CT2169
(MRCTB032142-MRCTB031058-
MRCTB031048)
USID – 61189
Site Name – New haven -
Woodmont**

**203 Research Dr
Milford, CT 6460**

Latitude: N41-14-25.47
Longitude: W73-0-42.99
Structure Type: Monopole

Report generated date: July 25, 2018
Report by: Scott Broyles
Customer Contact: Ryan Lynch

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

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1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	No
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant
Optional AT&T Mitigation Items?	No


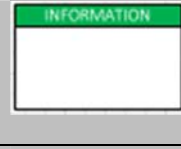






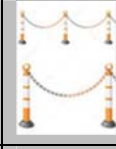
The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CT2169_2019-LTE-Next-Carrier_LTE_mr673a_2051A0GHBR_10035075_61189_03-29-2018_Final-Approved_v2.00

CD's: 10035075_AE201_180709_CTL02169_Rev 0_6C-7C-5G NR Upgrade

RF Powers Used: RFDS

1.2 Signage Summary

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>

1.3 Fall Arrest Anchor Point Summary

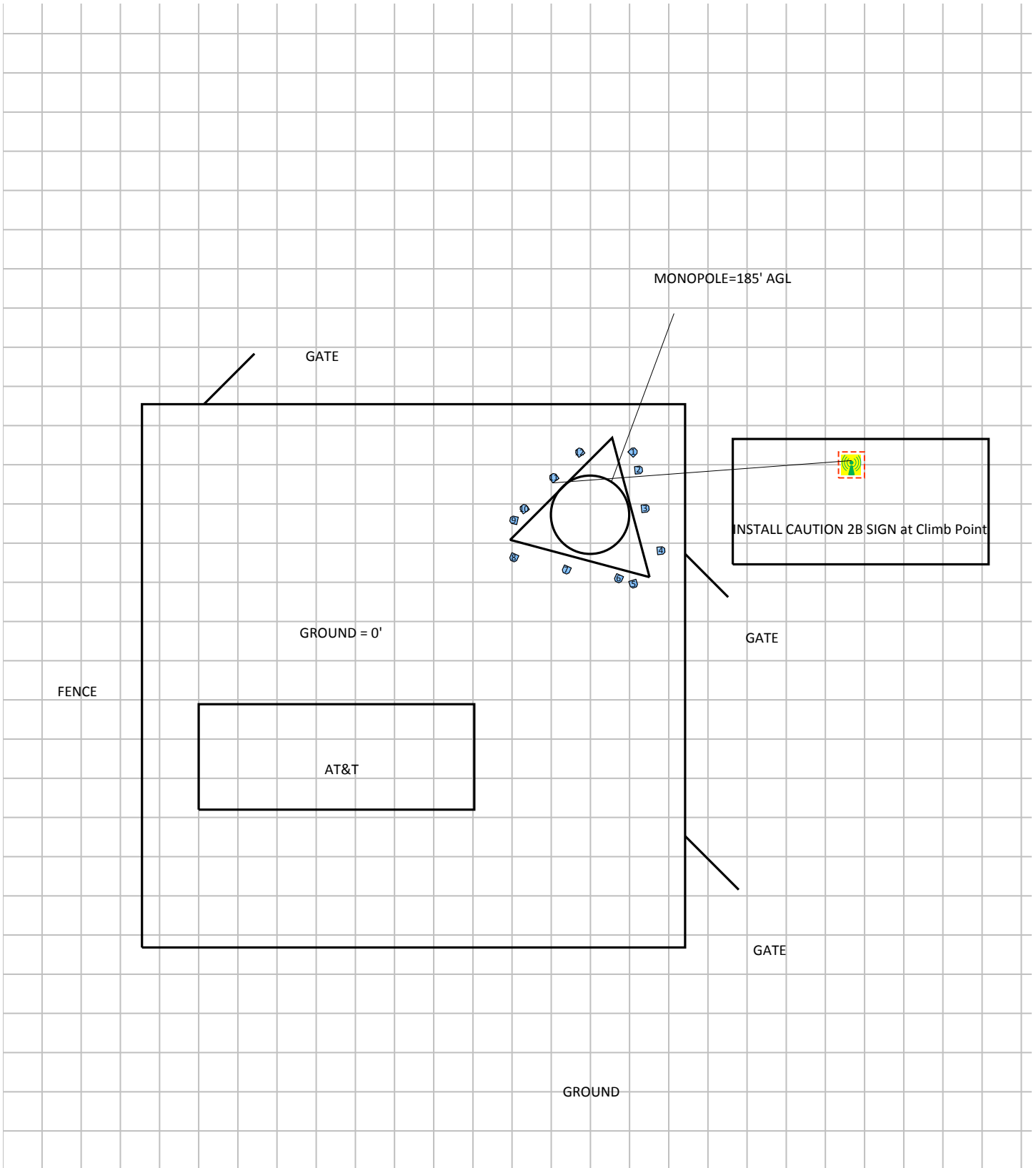
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

2 Scale Maps of Site

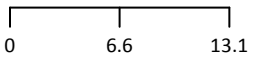
The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Elevation View

Site Scale Map For: New haven - Woodmont



(Feet)



www.sitesafe.com
 Site Name: New haven - Woodmont
 7/25/2018 12:03:41 PM

Carrier Identification					
	AT&T MOBILITY LLC		VERIZON WIRELESS		T-MOBILE
	SPRINT		UNKNOWN CARRIER		
Sign Legend					
	Caution 1		Caution 2		Notice 2
	Notice 1		Warning		Warning 2
	Info 1		Info 2		
Barrier			Proposed Barriers/ Signs		

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z AGL
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	21	82	4.6	11.51	1	0	167.5	116.1'	146.8'	164.7'
2	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	60	61.1	4	14.26	0	1	1285.3	116.6'	145'	165'
2	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	60	65.8	4	10.76	0	1	1475.7	116.6'	145'	165'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	850	60	62.4	4.9	12.16	0	1	500	117.3'	141.4'	164.5'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	763	60	64.9	4.9	11.4	0	1	2951.4	117.3'	141.4'	164.5'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	2100	60	60.7	4.9	15.18	0	1	3837.1	117.3'	141.4'	164.5'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	5G 850	60	62.4	4.9	12.16	0	1	500	117.3'	141.4'	164.5'
4	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	737	60	69	6	11.46	0	1	1475.7	118.8'	137.3'	164'
4	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	1900	60	68	6	14.16	0	1	3664.4	118.8'	137.3'	164'
5	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	138	82	4.6	11.51	1	0	265.5	116.1'	134.1'	164.7'
6	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	180	61.1	4	14.26	0	1	1285.3	114.7'	134.6'	165'
6	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	180	65.8	4	10.76	0	1	1475.7	114.7'	134.6'	165'
7	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	850	180	62.4	4.9	12.16	0	1	500	109.7'	135.5'	164.5'
7	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	763	180	64.9	4.9	11.4	0	1	2951.4	109.7'	135.5'	164.5'
7	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	2100	180	60.7	4.9	15.18	0	1	3837.1	109.7'	135.5'	164.5'
7	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	5G 850	180	62.4	4.9	12.16	0	1	500	109.7'	135.5'	164.5'
8	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	737	180	69	6	11.46	0	1	1475.7	104.7'	136.6'	164'
8	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	1900	180	68	6	14.16	0	1	3664.4	104.7'	136.6'	164'
9	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	259	82	4.6	11.51	1	0	265.5	104.7'	140.2'	164.7'
10	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	300	61.1	4	14.26	0	1	1285.3	105.7'	141.3'	165'
10	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	300	65.8	4	10.76	0	1	1475.7	105.7'	141.3'	165'
11	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	850	300	62.4	4.9	12.16	0	1	500	108.5'	144.3'	164.5'
11	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	763	300	64.9	4.9	11.4	0	1	2951.4	108.5'	144.3'	164.5'
11	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	2100	300	60.7	4.9	15.18	0	1	3837.1	108.5'	144.3'	164.5'

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z AGL
11	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10964	Panel	5G 850	300	62.4	4.9	12.16	0	1	500	108.5'	144.3'	164.5'
12	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	737	300	69	6	11.46	0	1	1475.7	111'	146.7'	164'
12	AT&T MOBILITY LLC	Quintel QS66512-2	Panel	1900	300	68	6	14.16	0	1	3664.4	111'	146.7'	164'

NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed.

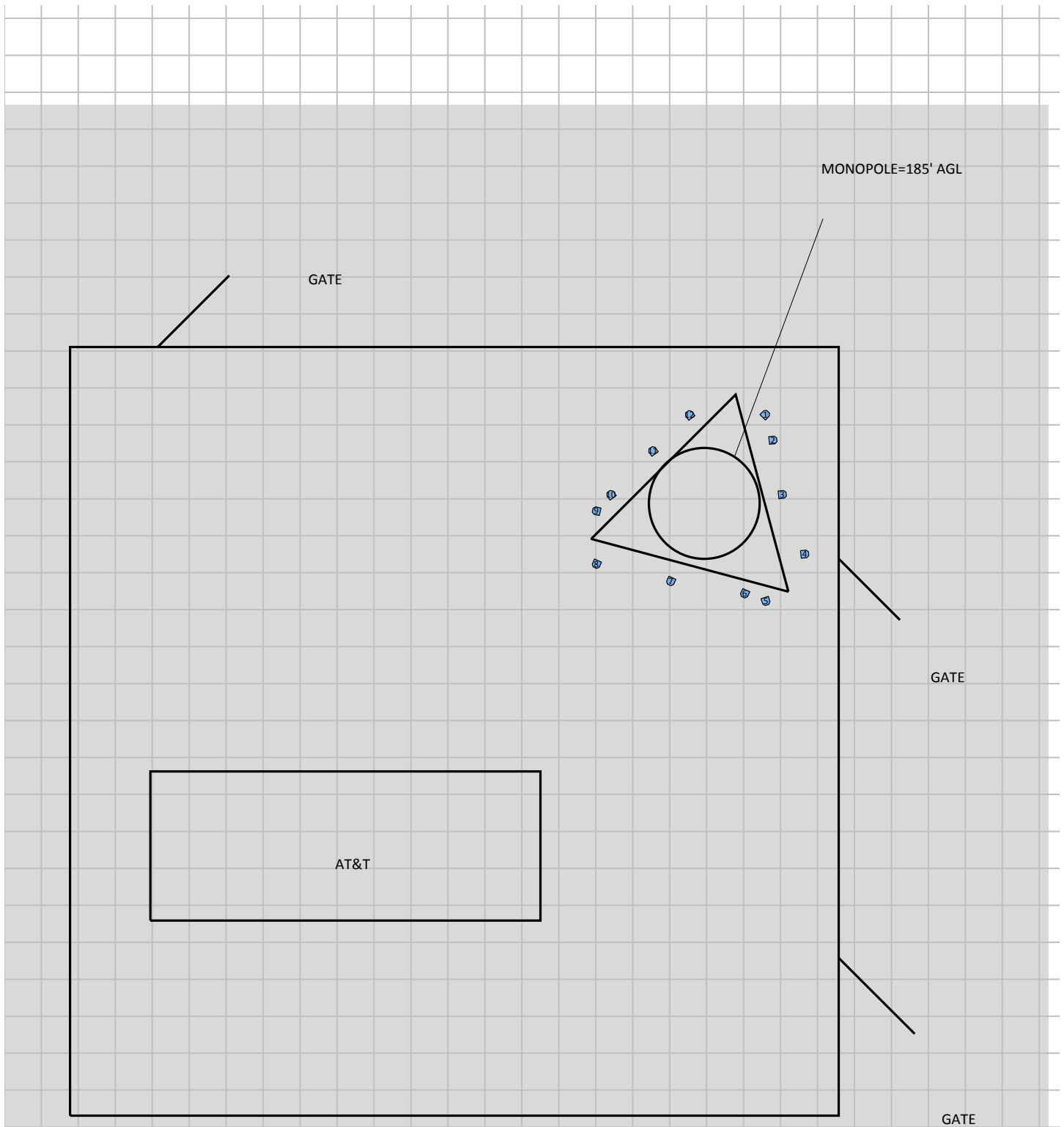
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

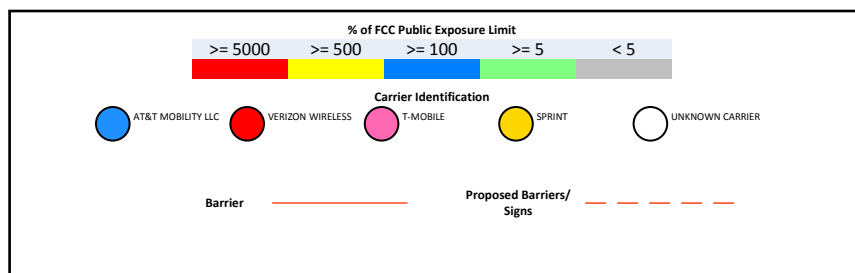
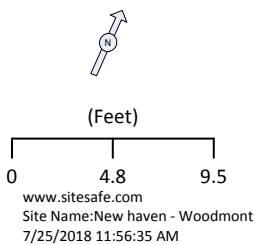
- Ground = 0'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: New haven – Woodmont Composite View

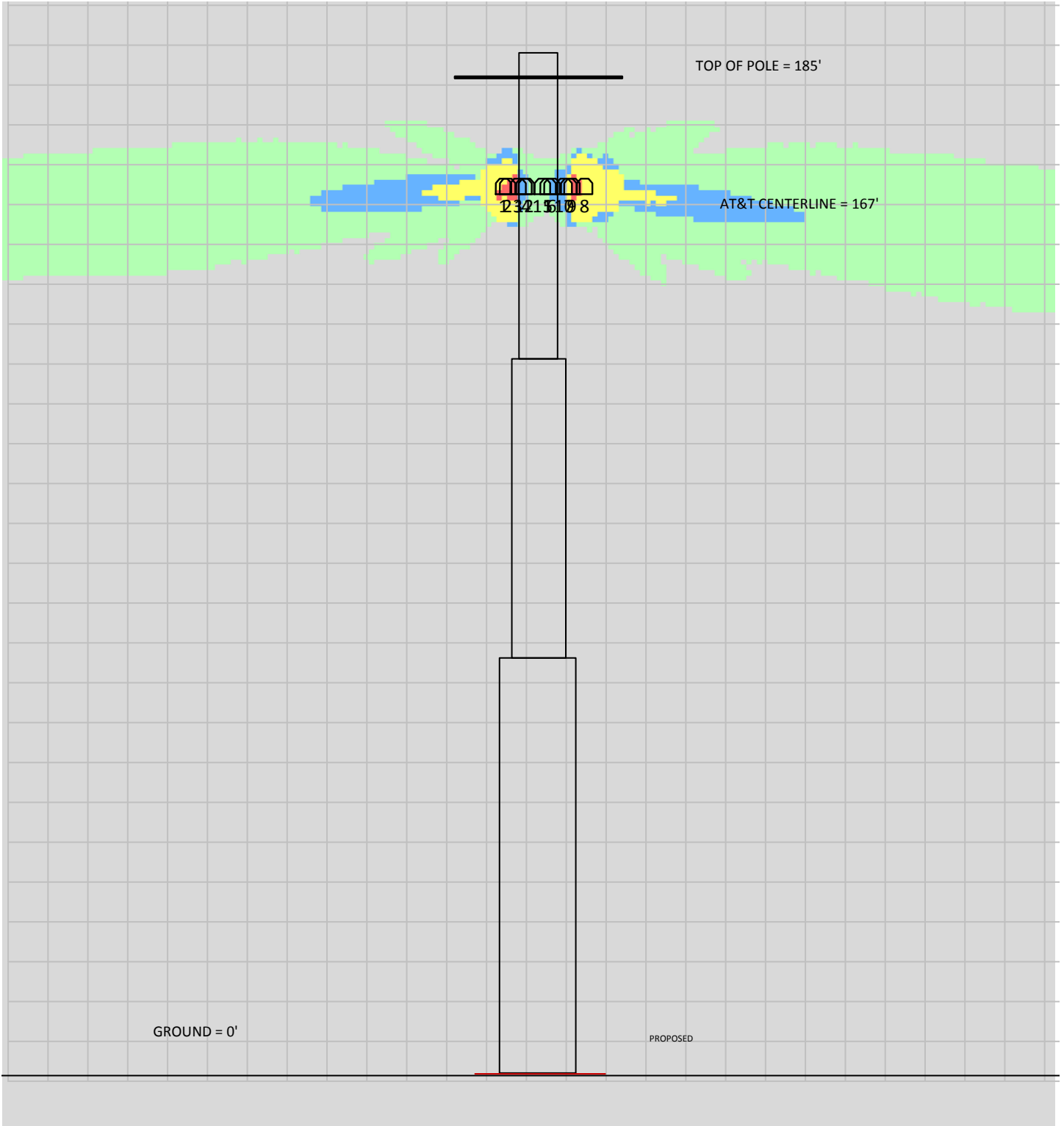


% of FCC Public Exposure Limit
Spatial average 0' - 6'

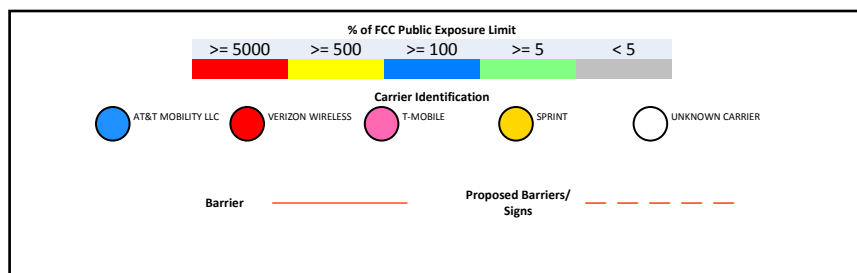
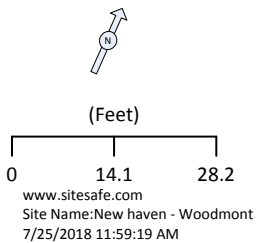


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: New haven – Woodmont Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Monopole Access Location

(1) Yellow Caution 2B sign(s) required at monopole climb point.

Notes:

- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Sitesafe, LLC., in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Scott Broyles.

July 25, 2018

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

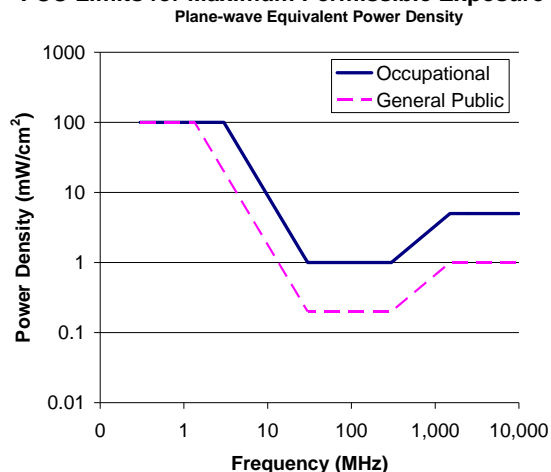
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

- (a) Each employer –
 - (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
 - (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, LLC.

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-ionising Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>

GENERAL NOTES:

- THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 50 HMS OR LESS.
- THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
- APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 - CONTRACTOR - SMARTLINK
 - SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 - OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
- ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION, ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.

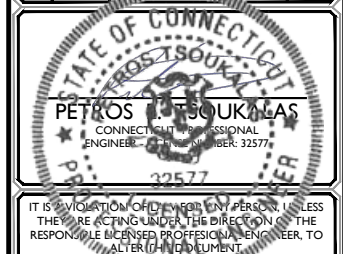


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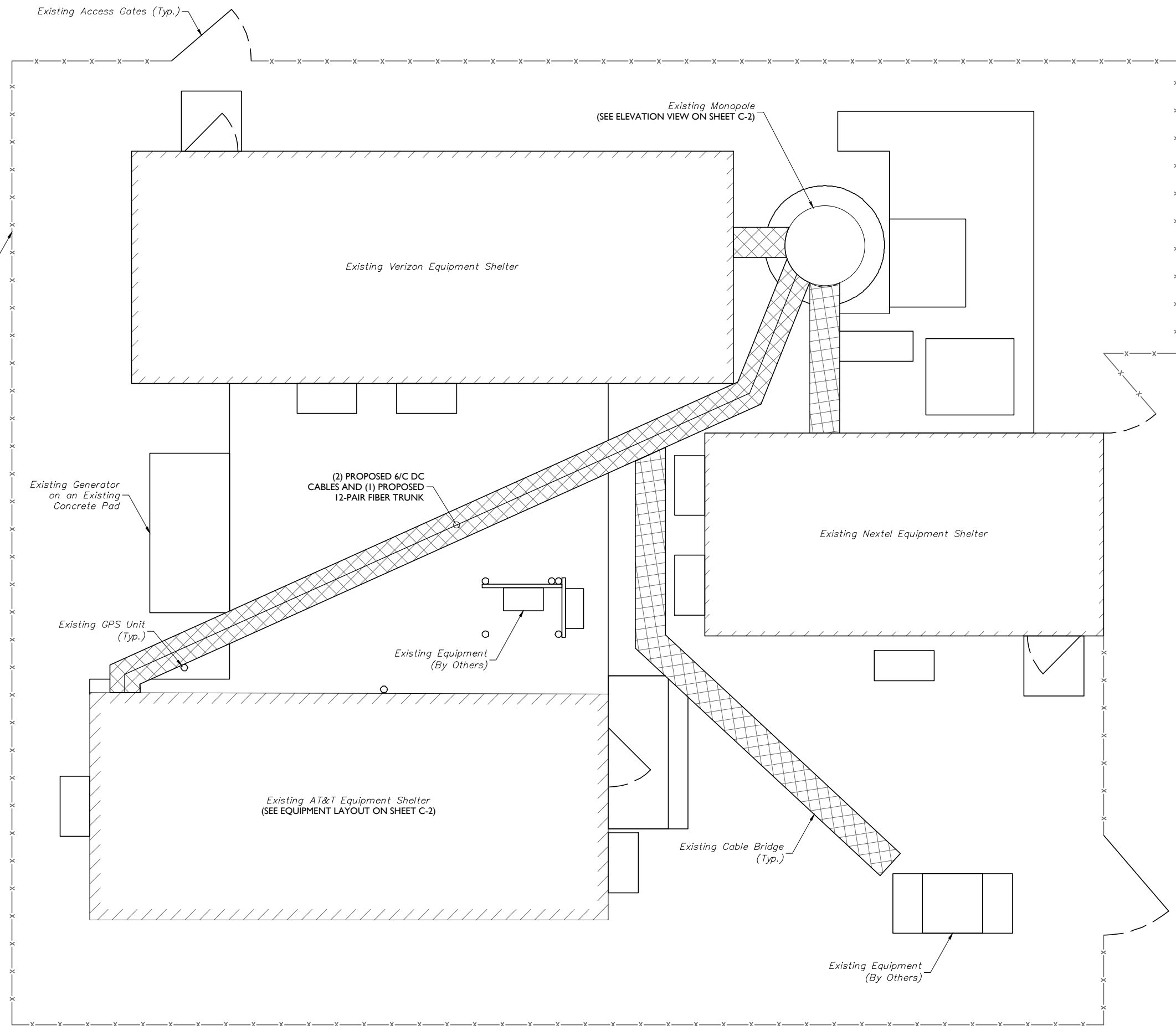
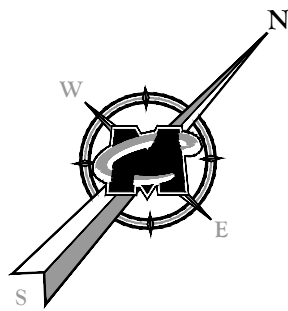
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MILFORD, CT 06460
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SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
GN-1

1003025_C1010166_CD_Are.dwg(04-11-18) By: ACCA



COMPOUND PLAN



SCALE : 1" = 2' FOR 22"X34"
 SCALE : 1" = 4' FOR 11"X17"

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COMPOUND PLAN

SHEET NUMBER:
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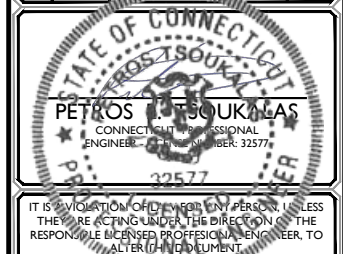
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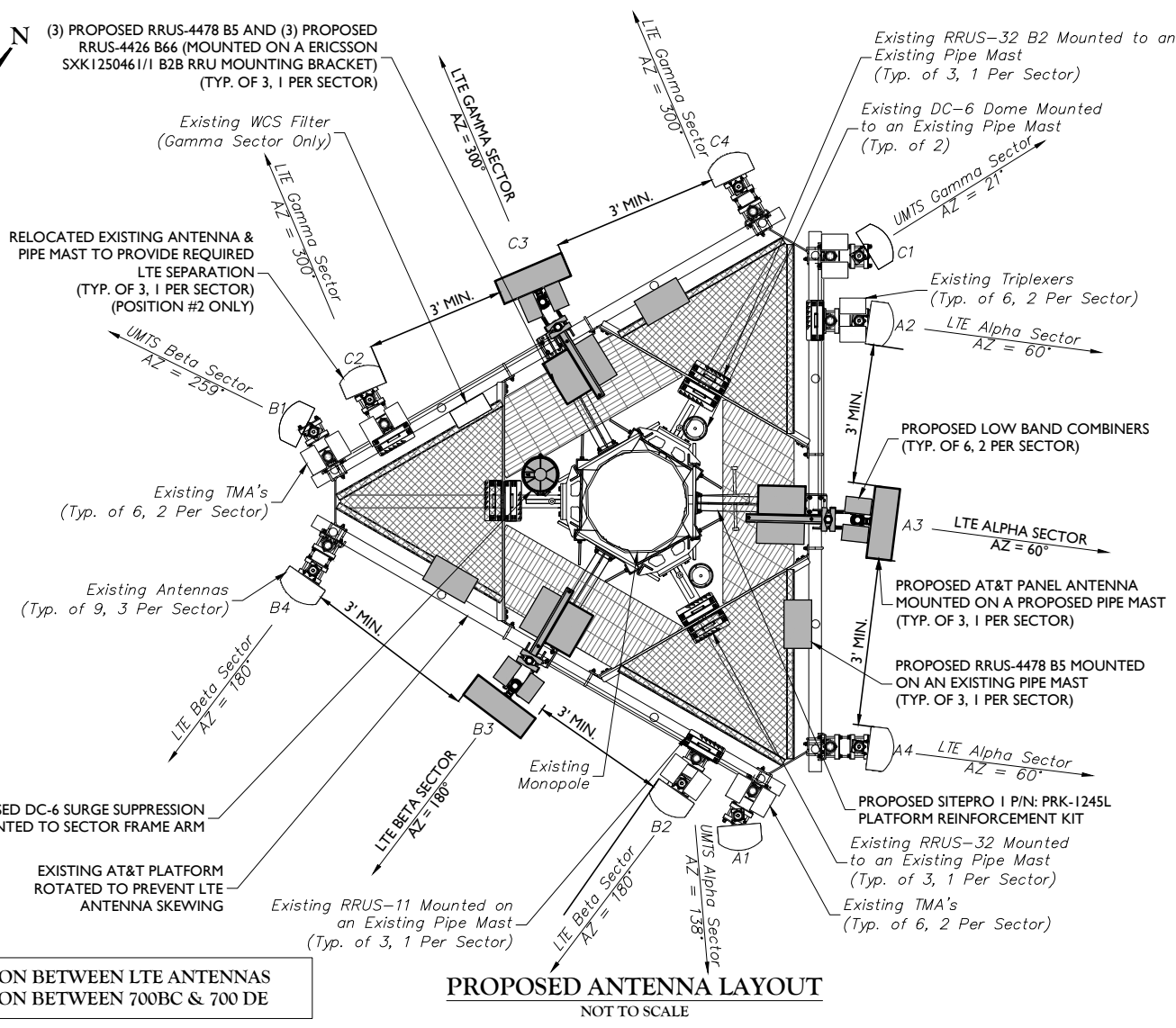
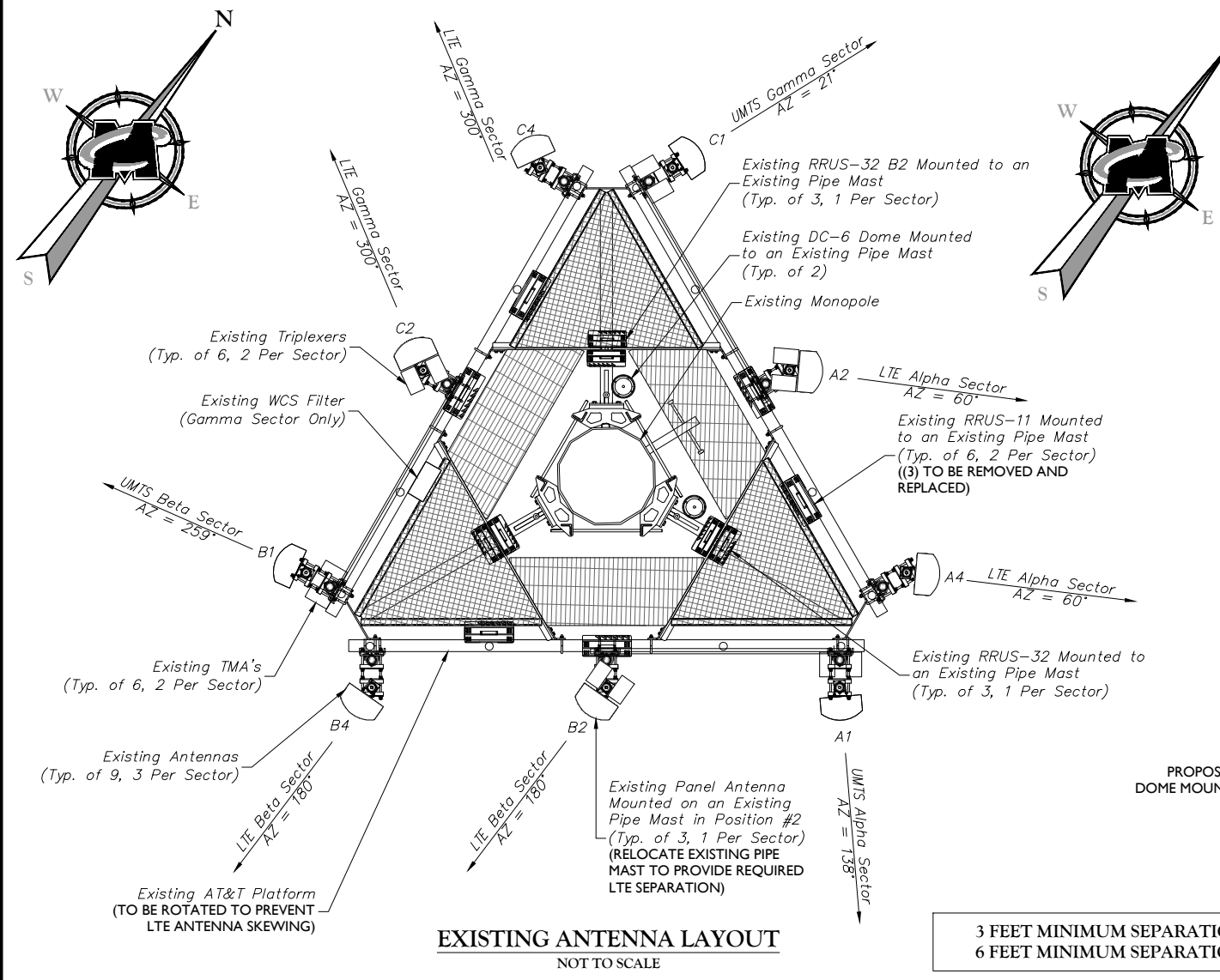


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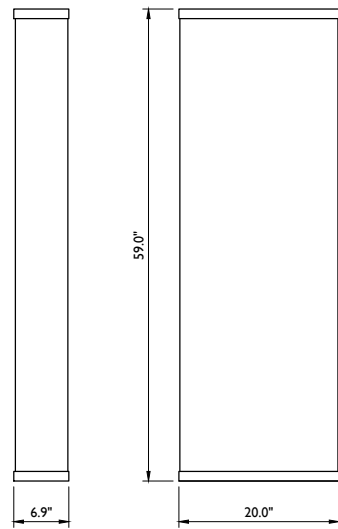
SHEET TITLE:
ANTENNA LAYOUTS AND ANTENNA SCHEDULE
 SHEET NUMBER:
C-3



3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
 6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

ANTENNA SCHEDULE

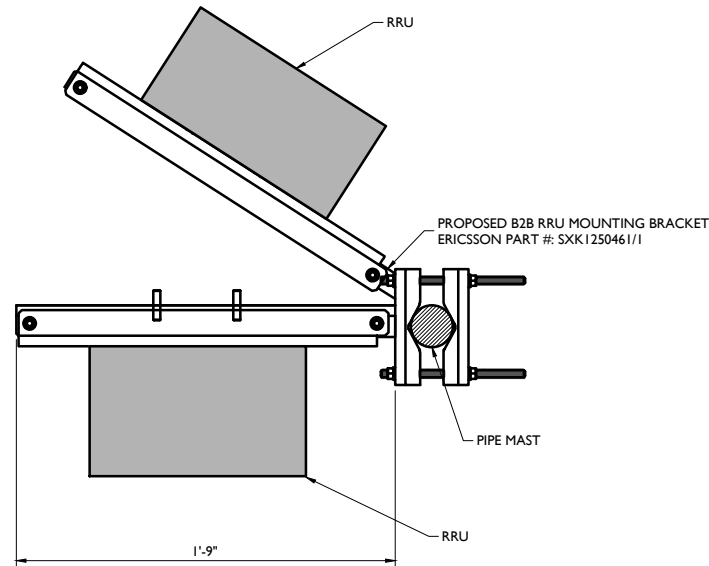
SECTOR	EXISTING ANTENNA	PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH (DEG.)	ANT. CL. ELEV. (ft.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE			
												QUANTITY	TYPE	STATUS	
Sector 1	1	POWERWAVE 7770	POWERWAVE 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	138	167	(2) LGP21901 Diplexer (2) LGP21401 TMA	2	1 1/4" COAX	REMAIN
	2	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.30	14.40	7.30	55.10	60	167	(4) TPX-070821 Triplexer (1) RRUS-E2 B29 Existing (1) RRUS-32 Existing	1/4	FIBER/DC	REMAIN
	3		KATHREIN 80010964	LTE	PROPOSED	59.00	20.00	6.90	94.80	60	167	(1) RRUS-B14 4478 (1) RRUS-4478 B5 (1) RRUS-4426 B66 (2) DBCT108F1V92-1	1/2	FIBER/DC	PROPOSED
	4	QUINTEL QS66512-2	COMMSCOPE NNH4-65D-R6	LTE	REMAIN	105.80	19.60	7.80	101.90	60	167	(1) RRUS-11 Existing (1) RRUS-32 B2 Existing	-	-	-
Sector 2	5	POWERWAVE 7770	POWERWAVE 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	259	167	(2) LGP21901 Diplexer (2) LGP21401 TMA	2	1 1/4" COAX	REMAIN
	6	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.30	14.40	7.30	55.10	180	167	(4) TPX-070821 Triplexer (1) RRUS-E2 B29 Existing (1) RRUS-32 Existing	-	-	-
	7		KATHREIN 80010964	LTE	PROPOSED	59.00	20.00	6.90	94.80	180	167	(1) RRUS-B14 4478 (1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-	-
	8	QUINTEL QS66512-2	COMMSCOPE NNH4-65D-R6	LTE	REMAIN	105.80	19.60	7.80	101.90	180	167	(1) RRUS-11 Existing (1) RRUS-32 B2 Existing	-	-	-
Sector 3	9	POWERWAVE 7770	POWERWAVE 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	21	167	(2) LGP21901 Diplexer (2) LGP21401 TMA	2	1 1/4" COAX	REMAIN
	10	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.30	14.40	7.30	55.10	300	167	(4) TPX-070821 Triplexer (1) RRUS-E2 B29 Existing (1) RRUS-32 Existing	-	-	-
	11		KATHREIN 80010964	LTE	PROPOSED	59.00	20.00	6.90	94.80	300	167	(1) RRUS-B14 4478 (1) RRUS-4478 B5 (1) RRUS-4426 B66 (2) DBCT108F1V92-1	-	-	-
	12	QUINTEL QS66512-2	COMMSCOPE NNH4-65D-R6	LTE	REMAIN	105.80	19.60	7.80	101.90	300	167	(1) RRUS-11 Existing (1) RRUS-32 B2 Existing	-	-	-



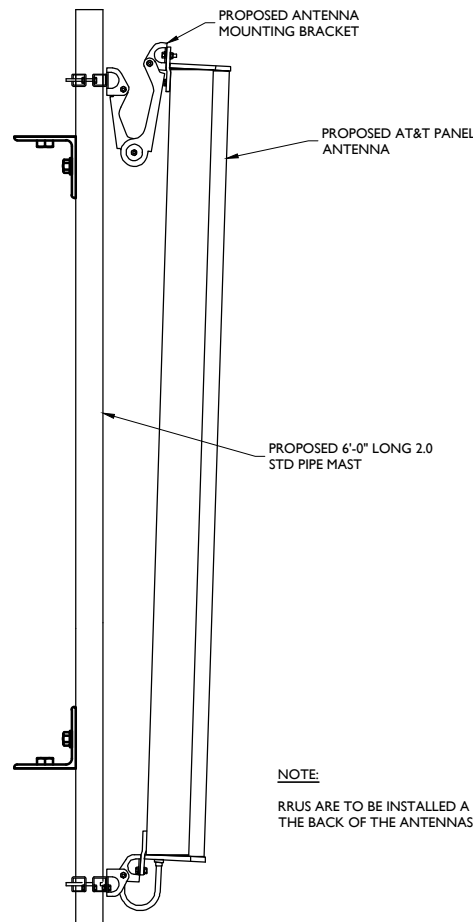
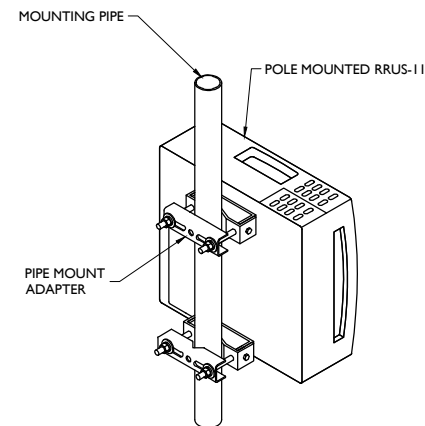
WEIGHT = 83.8 LBS

KATHREIN 800-10964

ANTENNA DETAIL
NOT TO SCALE

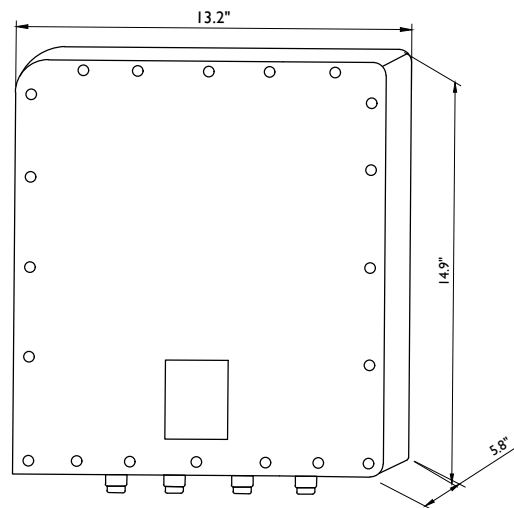


RRU MOUNTING DETAIL
NOT TO SCALE



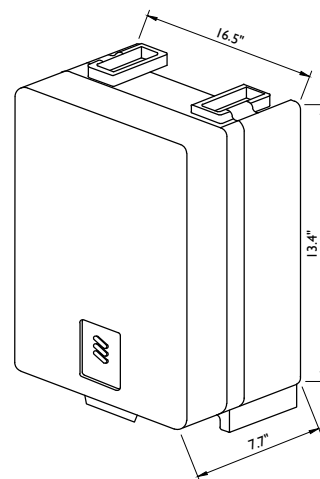
NOTE:

RRUS ARE TO BE INSTALLED A MINIMUM OF 8" FROM THE BACK OF THE ANTENNAS



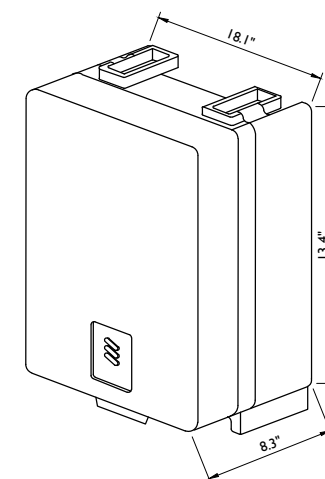
RRUS 4426 B66 DIMENSIONS (H X W X D): 14.9" X 13.2" X 5.9" (INCLUDES SUNSHIELD) WEIGHT: 48 LBS

RRUS 4426 B66 DETAIL
NOT TO SCALE



DIMENSIONS (H X W X D): 16.5"H X 13.4"W X 7.7"D (INCLUDES SUNSHIELD) WEIGHT: 59.9 LBS

RRU-4478-B5 DETAIL
NOT TO SCALE



DIMENSIONS (H X W X D): 18.1"H X 13.4"W X 8.3"D (INCLUDES SUNSHIELD) WEIGHT: 59.4 LBS

RRUS-B14 4478 DETAIL
NOT TO SCALE

ANTENNA MOUNTING DETAIL
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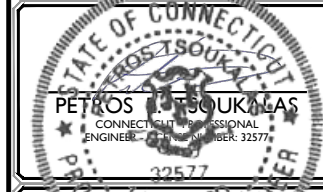
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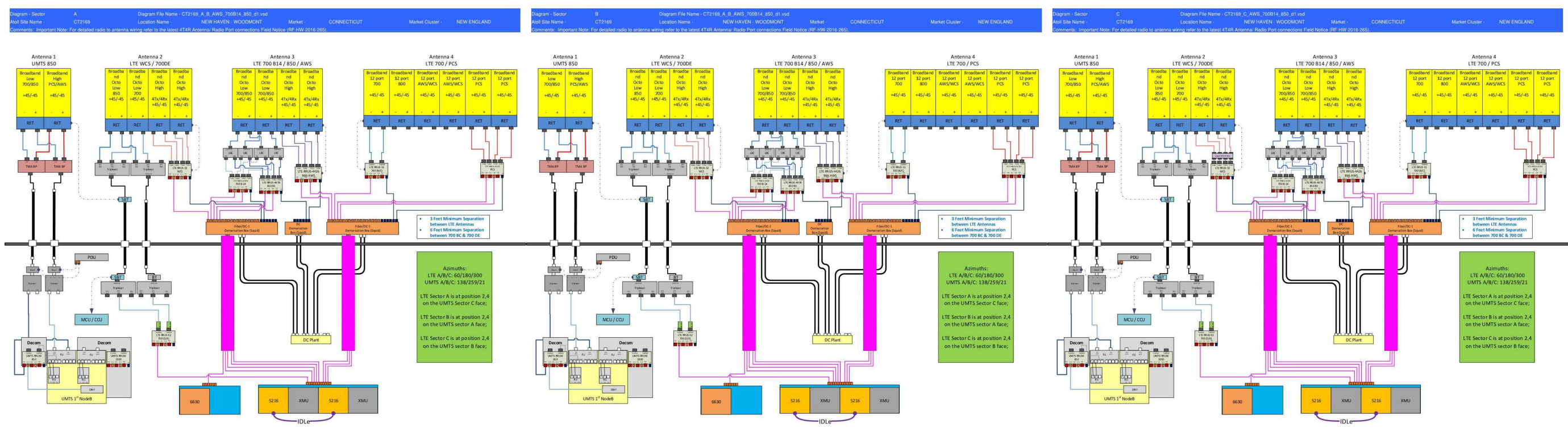
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SHEET NUMBER:
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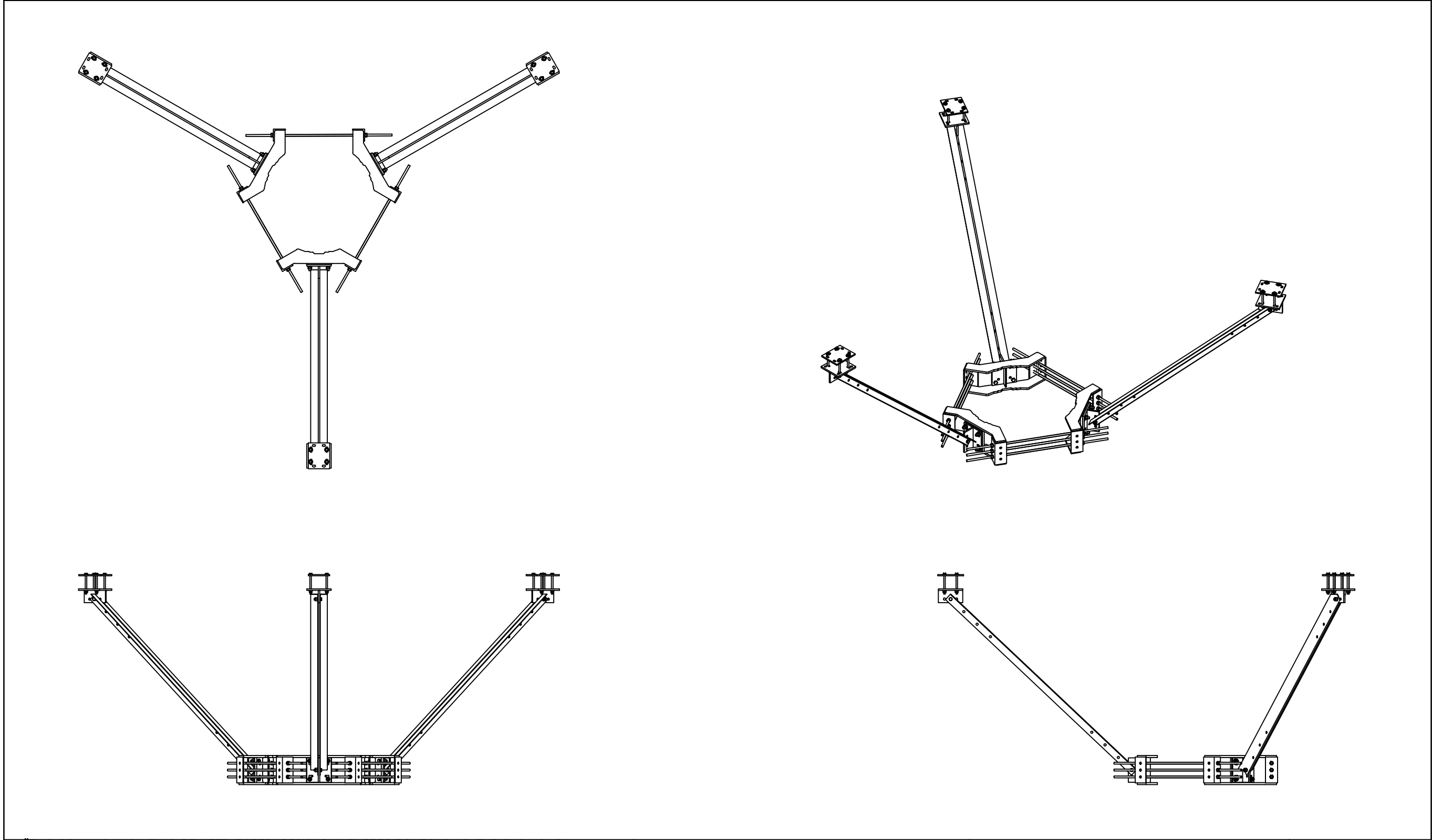
ALPHA SECTOR

BETA SECTOR

GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CT2169_2019-LTE-Next-Carrier_LTE_mr673a_2051A0GHBR_10035075_61189_03-29-2018_Final-Approved_v2.00", LAST REVISED 06/13/2018.

RF PLUMBING DIAGRAMS



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STRUCTURAL DETAILS

SHEET NUMBER:
S-I

1003025_C101018_CD_Rev 0.mxd/CL1 By: ACDA



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 183 ft Monopole
ATC Site Name : Milford CT 2, CT
ATC Site Number : 302535
Engineering Number : OAA735853_C3_02
Proposed Carrier : AT&T Mobility
Carrier Site Name : Milford Research Drive
Carrier Site Number : CTL02169 - 10035075
Site Location : 185 Research Drive
Milford, CT 06460-7733
41.240400,-73.011900
County : New Haven
Date : July 13, 2018
Max Usage : 85%
Result : Pass

Prepared By:
Zackaryah Hughes
Structural Engineer I

Reviewed By:

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
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Structure Usages	4
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Standard Conditions	5
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 183 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Summit Manufacturing Drawing #1237-D1, dated September 9, 1994
Foundation Drawing	Summit Manufacturing Drawing #1237-F1 dated October 10, 1994
Geotechnical Report	French & Parrello Project #93N035CR1, dated November 2, 1993
Modifications	ATC Job #42659834, dated January 16, 2009 ATC Job #43915332, dated September 2, 2009 ATC Job #56682734, dated April 16, 2014

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 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:	$S_s = 0.19$, $S_1 = 0.06$
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					
183.0	185.0	2	DragonWave Horizon Compact	Site Pro 1 RMQP-496-HK Platform w/ Handrails	(3) 1 1/4" Hybriflex (2) 2" Conduit (2) 1/2" Coax (1) 1.7" Hybrid	Clearwire
		6	Alcatel-Lucent RRH2x50-08			
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Decibel DB844H90E-XY			
		3	Nokia 2.5G MAA - AAHC(64T64R)			
		2	DragonWave A-ANT-18G-2-C			
		3	Andrew 844G65VTZASX			
		3	Commscope NNVV-65B-R4			
		-	-			
171.0	171.0	3	RFS APXV18-206517S-C	Flush	(12) 1 5/8" Coax (6) 1 5/8" Coax	Sprint Nextel Metro PCS
167.0	167.0	6	CCI TPX-070821	Platform w/ Handrails	(12) 1 1/4" Coax (4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 2" Conduit	AT&T Mobility
		1	Commscope WCS-IMFQ-AMT			
		6	Powerwave LGP21401			
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 4)			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS-32 (77 lbs)			
		3	Powerwave 7770.00			
		3	CCI OPA-65R-LCUU-H4			
		3	Quintel QS66512-2			
146.0	146.0	3	Kathrein Smart Bias Tee	Flush	(18) 1 5/8" Coax	T-Mobile
		3	Andrew ETW200VS12UB			
		3	Andrew ETW190VS12UB			
		3	Andrew SBNHH-1D65A			
127.0	127.0	6	RFS FD9R6004/1C-3L	Platform w/ Handrails	(12) 7/8" Coax (6) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH2X60-1900A-4R			
		3	Alcatel-Lucent RRH2X60-AWS			
		3	Alcatel-Lucent RRH2x40-AWS			
		2	RFS DB-T1-6Z-8AB-OZ			
		3	Andrew HBXX-6516DS-A2M			
		3	Andrew LNX-4514DS-A1M			
		3	Antel BXA-80063/6CF			
3	Andrew HBXX-6517DS-A2M					
7.0	7.0	2	Thales PCS VP/360/2 Type 8100	Stand-Off	-	T-Mobile



Equipment to be Removed

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

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
167.0	167.0	6	Kaelus DBCT108F1V92-1	Platform w/ Handrails	(2) 0.78" 8 AWG 6	AT&T Mobility
		1	Raycap DC6-48-60-18-8F ("Squid")			
		3	Ericsson RRUS 4426 B66			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 4478 B5			
		3	Kathrein 80010964			

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

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	69%	Pass
Shaft	85%	Pass
Base Plate	78%	Pass
Reinforcement	90%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,458.9	66%
Axial (Kips)	70.5	4%

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) (°)
183.0	DragonWave A-ANT-18G-2-C	Clearwire	3.102	1.995
167.0	Kaelus DBCT108F1V92-1	AT&T Mobility	2.552	1.927
	Raycap DC6-48-60-18-8F ("Squid")			
	Ericsson RRUS 4426 B66			
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 4478 B5			
	Kathrein Scala 80010964			

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



Standard Conditions

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

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

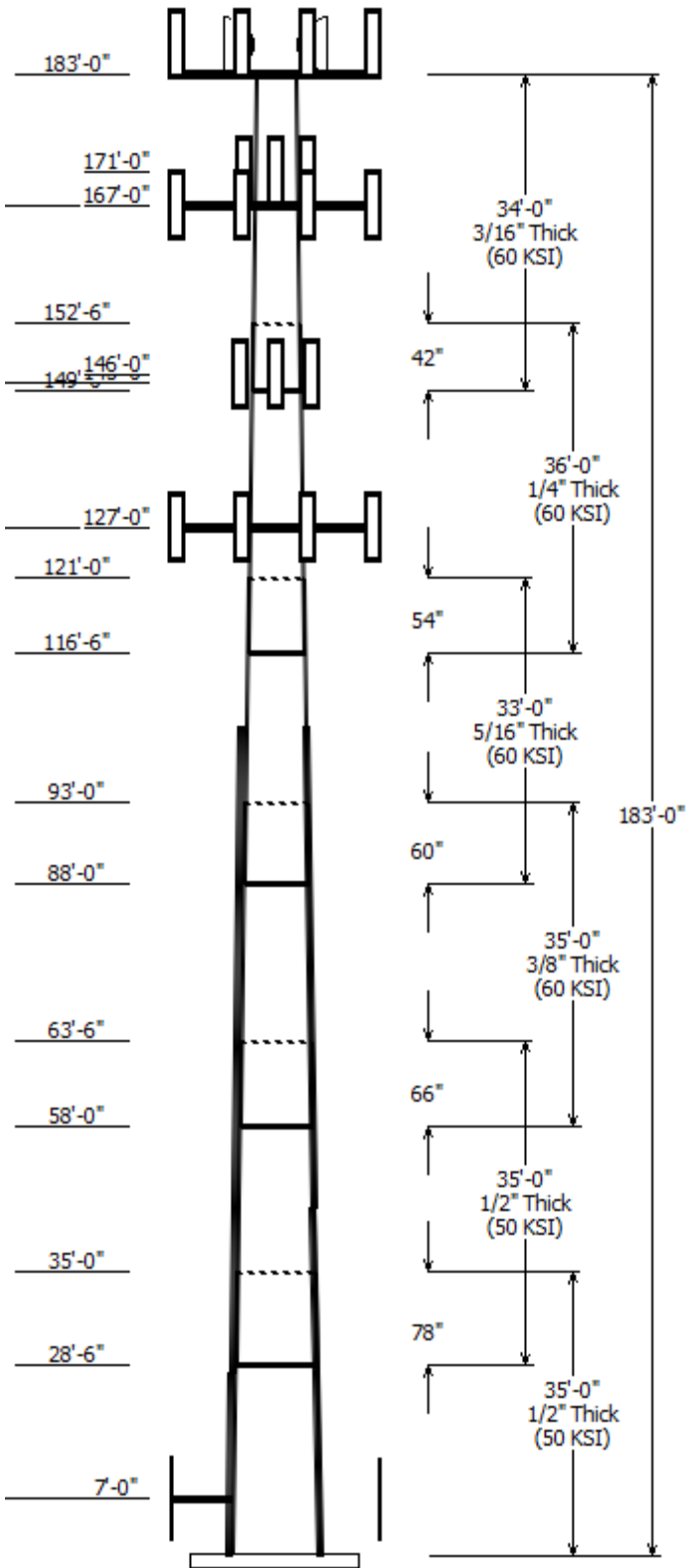
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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Job Information	
Pole : 302535	Code: ANSI/TIA-222-G
Location : Milford CT 2, CT	
Description : 183 ft Summit Monopole	
Client : AT&T MOBILITY	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 183.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.174917(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Across Flats Top	Across Flats Bottom				
1	35.000	42.49	48.62	0.500		0.000	18 Sides 50
2	35.000	38.51	44.63	0.500	Slip Joint	78.000	18 Sides 50
3	35.000	34.10	40.22	0.375	Slip Joint	66.000	18 Sides 60
4	33.000	29.83	35.60	0.313	Slip Joint	60.000	18 Sides 60
5	36.000	24.82	31.11	0.250	Slip Joint	54.000	18 Sides 60
6	34.000	19.86	25.80	0.188	Slip Joint	42.000	18 Sides 60

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
183.000	185.000	3	Nokia 2.5G MAA -
183.000	185.000	3	Commscope NNVV-65B-R4
183.000	185.000	3	Andrew 844G65VTZASX
183.000	185.000	3	Alcatel-Lucent 1900 MHz 4x45
183.000	185.000	6	Alcatel-Lucent RRH2x50-08
183.000	183.000	1	Site Pro 1 RMQP-496-HK Platfor
183.000	185.000	3	Decibel DB844H90E-XY
183.000	185.000	2	DragonWave Horizon Compact
183.000	185.000	2	DragonWave A-ANT-18G-2-C
171.000	171.000	3	RFS APXV18-206517S-C
167.000	167.000	6	CCI TPX-070821
167.000	167.000	3	Quintel QS66512-2
167.000	167.000	3	Ericsson RRUS 32 B2
167.000	167.000	1	Commscope WCS-IMFQ-AMT
167.000	167.000	3	Kathrein Scala 80010964
167.000	167.000	3	CCI OPA-65R-LCUU-H4
167.000	167.000	3	Ericsson RRUS-32 (77 lbs)
167.000	167.000	2	Raycap DC6-48-60-18-8F
167.000	167.000	3	Ericsson RRUS 4478 B5
167.000	167.000	3	Ericsson RRUS 4478 B14
167.000	167.000	1	Raycap DC6-48-60-18-8F
167.000	167.000	3	Ericsson RRUS 11 (Band 4)
167.000	167.000	3	Ericsson RRUS 4426 B66
167.000	167.000	1	Flat Platform w/ Handrails
167.000	167.000	6	Powerwave Allgon LGP21401
167.000	167.000	3	Powerwave Allgon 7770.00
167.000	167.000	6	Kaelus DBCT108F1V92-1
146.000	146.000	3	Kathrein Scala Smart Bias Tee
146.000	146.000	3	Andrew SBNHH-1D65A
146.000	146.000	3	Andrew ETW190VS12UB
146.000	146.000	3	Andrew ETW200VS12UB
145.000	145.000	1	Flush Mounts
127.000	127.000	1	Flat Platform w/ Handrails
127.000	127.000	3	Andrew HBXX-6517DS-A2M
127.000	127.000	3	Antel BXA-80063/6CF
127.000	127.000	3	Andrew LNX-4514DS-A1M
127.000	127.000	3	Andrew HBXX-6516DS-A2M
127.000	127.000	1	RFS DB-T1-6Z-8AB-0Z
127.000	127.000	1	RFS DB-T1-6Z-8AB-0Z
127.000	127.000	3	Alcatel-Lucent RRH2x40-AWS
127.000	127.000	3	Alcatel-Lucent RRH2X60-AWS

127.000	127.000	3	Alcatel-Lucent RRH2X60-1900A-
127.000	127.000	6	RFS FD9R6004/1C-3L
7.000	7.000	1	Stand-Off
7.000	7.000	2	Thales PCS VP/360/2 Type 8100

Linear Appurtenance

Elev (ft)		Description	Exposed To Wind
From	To		
5.000	127.0	1 5/8" Coax	No
5.000	127.0	1 5/8" Fiber	No
5.000	127.0	7/8" Coax	No
5.000	146.0	1 5/8" Coax	No
5.000	146.0	1 5/8" Coax	Yes
5.000	146.0	1 5/8" Coax	Yes
5.000	167.0	0.39" Fiber Trunk	No
5.000	167.0	0.78" 8 AWG 6	No
5.000	167.0	0.78" 8 AWG 6	No
5.000	167.0	1 1/4" Coax	No
5.000	167.0	2" Conduit	No
5.000	171.0	1 5/8" Coax	Yes
5.000	183.0	1 1/4" Hybriflex	Yes
5.000	183.0	1 5/8" Coax	No
5.000	183.0	1.7" Hybrid	Yes
5.000	183.0	1/2" Coax	Yes
5.000	183.0	2" Conduit	Yes
0.000	110.7	#20 Dywidag Bars	Yes

Load Cases

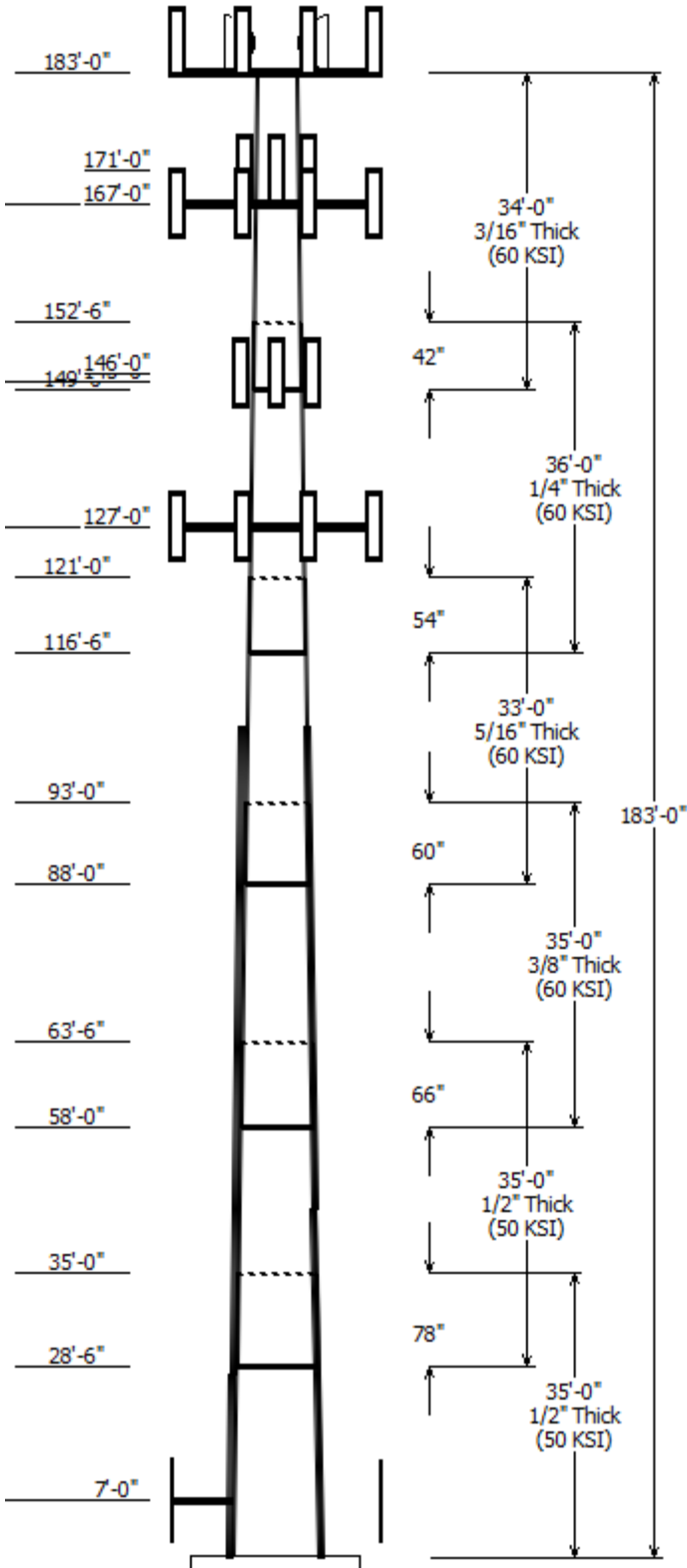
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL)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

Reactions

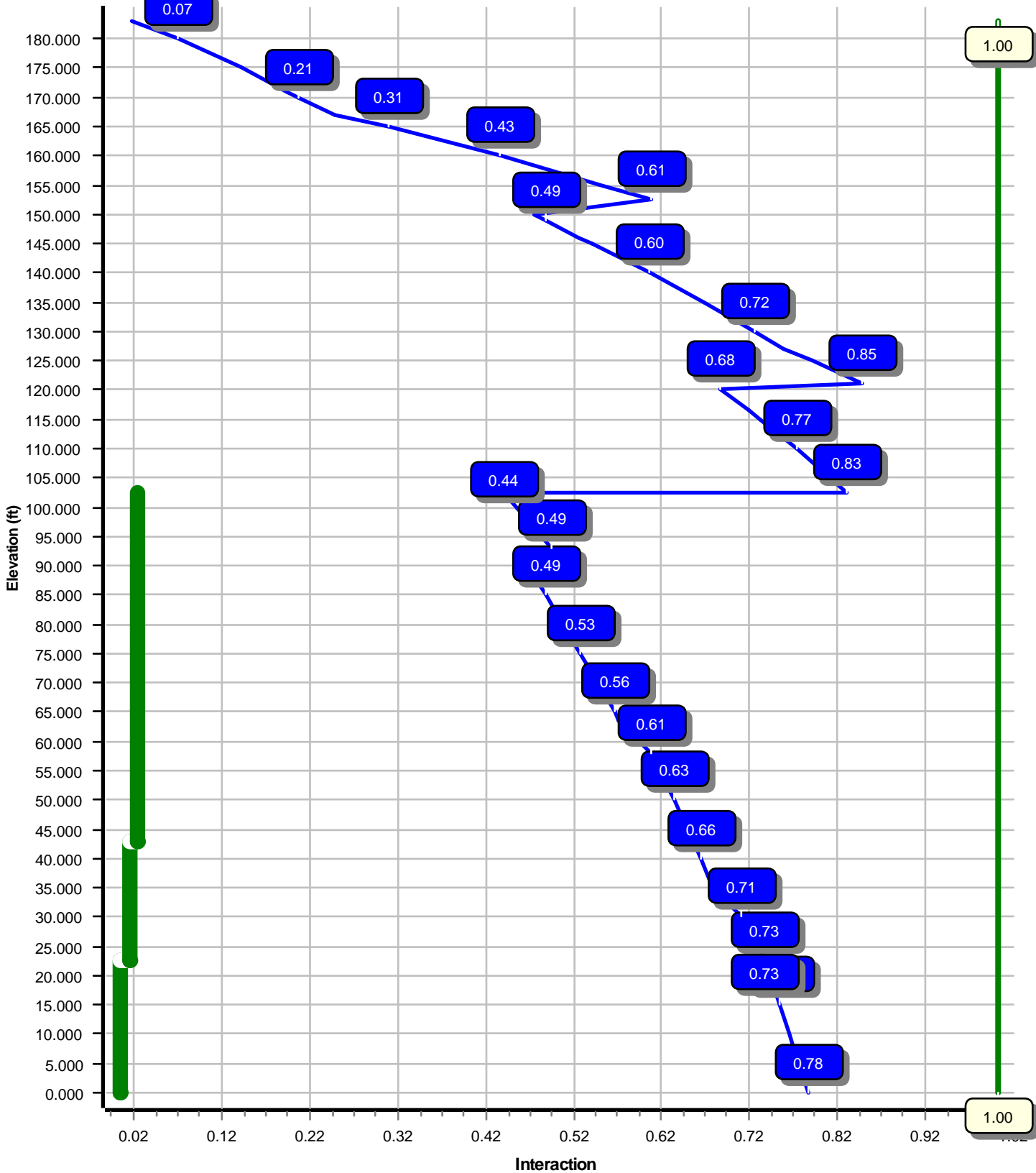
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4458.86	37.90	70.49
0.9D + 1.6W	4268.07	37.10	52.85
1.2D + 1.0Di + 1.0Wi	1819.06	11.80	128.90
(1.2 + 0.2Sds) * DL + E ELFM	345.38	2.30	70.94
(1.2 + 0.2Sds) * DL + E EMAM	446.64	3.33	70.94
(0.9 - 0.2Sds) * DL + E ELFM	337.42	2.30	49.13
(0.9 - 0.2Sds) * DL + E EMAM	435.59	3.33	49.13
1.0D + 1.0W	1036.35	8.98	58.79

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	183.00	37.221	1.995



Load Case : 1.2D + 1.6W
Max Ratio 84.52% at 121.0 ft



Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:19 AM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	183
Code :	ANSI/TIA-222-G	Base Diameter (in) :	48.62
Shape :	18 Sides	Top Diameter (in) :	19.86
Pole Type :	Taper	Taper (in/ft) :	0.175
Pole Manufacturer :	Summit Manufacturing	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):	3.13		
T _L (sec):	6	p:	1.3
S _s :	0.191	S ₁ :	0.063
F _a :	1.600	F _v :	2.400
S _{ds} :	0.204	S _{d1} :	0.101
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 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: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

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Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	35.000	0.5000	50		0.00	8,516	48.62	0.00	76.36	22340.1	15.38	97.24	42.49	35.00	66.65	14852.2	13.22	85.00	0.174917	
2-18	35.000	0.5000	50	Slip	78.00	7,763	44.63	28.50	70.04	17236.7	13.98	89.27	38.51	63.50	60.32	11012.7	11.82	77.03	0.174917	
3-18	35.000	0.3750	60	Slip	66.00	5,215	40.22	58.00	47.43	9515.8	17.15	107.27	34.10	93.00	40.14	5769.4	14.27	90.94	0.174917	
4-18	33.000	0.3125	60	Slip	60.00	3,609	35.60	88.00	35.00	5507.2	18.33	113.93	29.83	121.00	29.28	3222.7	15.07	95.46	0.174917	
5-18	36.000	0.2500	60	Slip	54.00	2,694	31.11	116.50	24.49	2948.2	20.18	124.47	24.82	152.50	19.50	1486.9	15.74	99.28	0.174917	
6-18	34.000	0.1875	60	Slip	42.00	1,559	25.80	149.00	15.25	1264.3	22.51	137.64	19.86	183.00	11.71	572.4	16.91	105.92	0.174917	
Shaft Weight						29,356														

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
183.00	Alcatel-Lucent 1900 MHz 4x45 R	3	0.000	2.000	60.00	2.320	0.50
183.00	Alcatel-Lucent RRH2x50-08	6	0.000	2.000	52.90	1.700	0.50
183.00	Andrew 844G65VTZASX	3	0.000	2.000	16.00	5.310	0.71
183.00	Commscope NNVV-65B-R4	3	0.000	2.000	77.40	13.720	0.64
183.00	Decibel DB844H90E-XY	3	0.000	2.000	14.00	3.610	0.74
183.00	DragonWave A-ANT-18G-2-C	2	0.000	2.000	27.10	4.690	0.90
183.00	DragonWave Horizon Compact	2	0.000	2.000	10.60	0.430	0.50
183.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.000	2.000	103.60	4.200	0.64
183.00	Site Pro 1 RMQP-496-HK Platfor	1	0.000	0.000	2448.72	42.400	1.00
171.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.170	0.68
167.00	CCI OPA-65R-LCUU-H4	3	0.000	0.000	57.00	6.080	0.66
167.00	CCI TPX-070821	6	0.000	0.000	7.50	0.550	0.50
167.00	Commscope WCS-IMFQ-AMT	1	0.000	0.000	29.50	0.990	0.50
167.00	Ericsson RRUS 11 (Band 4)	3	0.000	0.000	44.00	2.570	0.50
167.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	2.740	0.50
167.00	Ericsson RRUS 4426 B66	3	0.000	0.000	48.40	1.650	0.50
167.00	Ericsson RRUS 4478 B14	3	0.000	0.000	59.90	1.840	0.50
167.00	Ericsson RRUS 4478 B5	3	0.000	0.000	59.90	1.840	0.50
167.00	Ericsson RRUS-32 (77 lbs)	3	0.000	0.000	77.00	3.310	0.50
167.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
167.00	Kaelus DBCT108F1V92-1	6	0.000	0.000	13.90	0.610	0.50
167.00	Kathrein Scala 80010964	3	0.000	0.000	81.60	10.000	0.62
167.00	Powerwave Allgon 7770.00	3	0.000	0.000	35.00	5.510	0.65
167.00	Powerwave Allgon LGP21401	6	0.000	0.000	14.10	1.100	0.50
167.00	Quintel QS66512-2	3	0.000	0.000	111.00	8.130	0.74
167.00	Raycap DC6-48-60-18-8F	2	0.000	0.000	20.00	1.110	1.00
167.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	0.000	31.80	1.280	1.00
146.00	Andrew ETW190VS12UB	3	0.000	0.000	11.00	0.760	0.50
146.00	Andrew ETW200VS12UB	3	0.000	0.000	11.00	0.470	0.50
146.00	Andrew SBNHH-1D65A	3	0.000	0.000	40.90	5.880	0.69
146.00	Kathrein Scala Smart Bias Tee	3	0.000	0.000	3.30	0.090	0.50
145.00	Flush Mounts	1	0.000	0.000	200.00	3.500	0.67
127.00	Alcatel-Lucent RRH2x40-AWS	3	0.000	0.000	44.00	2.160	0.50
127.00	Alcatel-Lucent RRH2x60-1900A-4	3	0.000	0.000	46.00	1.870	0.50
127.00	Alcatel-Lucent RRH2x60-AWS	3	0.000	0.000	44.00	1.880	0.50
127.00	Andrew HBXX-6516DS-A2M	3	0.000	0.000	30.60	5.420	0.67
127.00	Andrew HBXX-6517DS-A2M	3	0.000	0.000	43.00	8.530	0.68
127.00	Andrew LNX-4514DS-A1M	3	0.000	0.000	29.50	6.780	0.64
127.00	Antel BXA-80063/6CF	3	0.000	0.000	14.90	7.580	0.65
127.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
127.00	RFS DB-T1-6Z-8AB-0Z	1	0.000	0.000	44.00	4.800	0.50
127.00	RFS DB-T1-6Z-8AB-0Z	1	0.000	0.000	44.00	4.800	0.50
127.00	RFS FD9R6004/1C-3L	6	0.000	0.000	3.10	0.370	0.50
7.00	Stand-Off	1	0.000	0.000	75.00	2.500	1.00
7.00	Thales PCS VP/360/2 Type 8100	2	0.000	0.000	0.30	0.030	1.00

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:19 AM

Customer: AT&T MOBILITY

Totals Num Loadings:45

128

11265.22

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width (in)	Exposed To Wind	Carrier	
5.00	183.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Y	Clearwire Corporation
5.00	183.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
5.00	183.00	1	1.7" Hybrid	1.70	1.78	N	0.00	Y	Clearwire Corporation
5.00	183.00	2	1/2" Coax	0.63	0.15	N	0.00	Y	Clearwire Corporation
5.00	183.00	2	2" Conduit	2.38	3.65	N	2.38	Y	Clearwire Corporation
5.00	171.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	Metro PCS Inc
5.00	167.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
5.00	167.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
5.00	167.00	4	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
5.00	167.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
5.00	167.00	2	2" Conduit	2.38	3.65	N	0.00	N	AT&T Mobility
5.00	146.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
5.00	146.00	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	T-Mobile
5.00	146.00	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	T-Mobile
5.00	127.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon Wireless
5.00	127.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon Wireless
5.00	127.00	12	7/8" Coax	1.09	0.33	N	0.00	N	Verizon Wireless
0.00	110.78	4	#20 Dywidag Bars	2.72	0.00	N	5.62	Y	--

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections			Connectors	Continuation?
					Description	Spacing (in)	Len (in)			
0.00	22.50	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	20.0	3.31	5/8" A36 U-Bolt	No
22.50	43.00	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	18.0	3.31	5/8" A36 U-Bolt	Yes
43.00	102.5	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

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)	Additional Reinforcing		
												Area (in ²)	Ix (in ⁴)	Weight (lb)
0.00		0.5000	48.620	76.363	22,340.1	15.38	97.24	63.5	905.0	0.0	0.0	19.64	7,654	0.0
5.00		0.5000	47.745	74.975	21,144.0	15.07	95.49	63.5	872.2	0.0	1,287.4	19.64	7,412	334.0
7.00		0.5000	47.395	74.420	20,677.8	14.95	94.79	63.5	859.3	0.0	508.4	19.64	7,317	133.6
10.00		0.5000	46.871	73.588	19,991.4	14.77	93.74	63.5	840.1	0.0	755.5	19.64	7,175	200.4
15.00		0.5000	45.996	72.200	18,881.4	14.46	91.99	63.5	808.5	0.0	1,240.2	19.64	6,941	334.0
20.00		0.5000	45.121	70.812	17,813.3	14.15	90.24	63.5	777.6	0.0	1,216.6	19.64	6,711	334.0
22.50	Reinf. Top Reinf	0.5000	44.684	70.118	17,294.7	13.99	89.37	63.5	762.3	0.0	599.4	19.64	6,598	167.0
25.00		0.5000	44.247	69.424	16,786.3	13.84	88.49	63.5	747.2	0.0	593.5	19.64	6,485	167.0
28.50	Bot - Section 2	0.5000	43.635	68.452	16,091.4	13.62	87.27	63.5	726.3	0.0	821.0	19.64	6,329	233.8
30.00		0.5000	43.372	68.036	15,799.5	13.53	86.74	63.5	717.5	0.0	704.8	19.64	6,517	100.2
35.00	Top - Section 1	0.5000	43.498	68.235	15,938.6	13.58	87.00	63.5	721.7	0.0	2,318.5	19.64	6,295	334.0
40.00		0.5000	42.623	66.847	14,985.6	13.27	85.25	63.5	692.5	0.0	1,149.1	19.64	6,076	334.0
43.00	Reinf. Top Reinf	0.5000	42.098	66.014	14,432.5	13.08	84.20	63.5	675.2	0.0	678.1	19.64	5,947	200.4
45.00		0.5000	41.749	65.459	14,071.5	12.96	83.50	63.5	663.9	0.0	447.4	19.64	5,861	133.6
50.00		0.5000	40.874	64.071	13,195.2	12.65	81.75	63.5	635.8	0.0	1,101.9	19.64	5,650	334.0
55.00		0.5000	39.999	62.683	12,356.2	12.34	80.00	63.5	608.4	0.0	1,078.3	19.64	5,443	334.0
58.00	Bot - Section 3	0.5000	39.475	61.850	11,870.2	12.16	78.95	63.5	592.3	0.0	635.6	19.64	5,321	200.4
60.00		0.5000	39.125	61.295	11,553.4	12.03	78.25	63.5	581.6	0.0	740.4	19.64	5,414	133.6
63.50	Top - Section 2	0.3750	39.263	46.284	8,843.2	16.70	104.70	76.2	443.6	0.0	1,279.8	19.64	5,272	233.8
65.00		0.3750	39.000	45.972	8,665.4	16.57	104.00	76.2	437.6	0.0	235.4	19.64	5,211	100.2
70.00		0.3750	38.126	44.931	8,090.0	16.16	101.67	76.2	417.9	0.0	773.3	19.64	5,012	334.0
75.00		0.3750	37.251	43.890	7,540.6	15.75	99.34	76.2	398.7	0.0	755.6	19.64	4,817	334.0
80.00		0.3750	36.376	42.849	7,016.7	15.34	97.00	76.2	379.9	0.0	737.9	19.64	4,626	334.0
85.00		0.3750	35.502	41.808	6,517.7	14.93	94.67	76.2	361.6	0.0	720.2	19.64	4,439	334.0
88.00	Bot - Section 4	0.3750	34.977	41.184	6,229.9	14.68	93.27	76.2	350.8	0.0	423.6	19.64	4,329	200.4
90.00		0.3750	34.627	40.767	6,042.9	14.52	92.34	76.2	343.7	0.0	515.9	19.64	4,386	133.6
93.00	Top - Section 3	0.3125	34.727	34.134	5,107.8	17.83	111.13	75.0	289.7	0.0	764.1	19.64	4,277	200.4
95.00		0.3125	34.378	33.787	4,953.6	17.63	110.01	75.2	283.8	0.0	231.1	19.64	4,204	133.6
100.0		0.3125	33.503	32.920	4,581.8	17.14	107.21	75.7	269.4	0.0	567.5	19.64	4,026	334.0
102.5	Reinf. Top	0.3125	33.066	32.486	4,403.1	16.89	105.81	76.0	262.3	0.0	278.2	19.64	3,938	167.0
105.0		0.3125	32.628	32.052	4,229.1	16.65	104.41	76.2	255.3	0.0	274.5			
110.0		0.3125	31.754	31.185	3,894.9	16.15	101.61	76.2	241.6	0.0	538.0			
115.0		0.3125	30.879	30.317	3,578.9	15.66	98.81	76.2	228.3	0.0	523.2			
116.5	Bot - Section 5	0.3125	30.617	30.057	3,487.5	15.51	97.97	76.2	224.4	0.0	154.1			
120.0		0.3125	30.005	29.450	3,280.4	15.17	96.02	76.2	215.3	0.0	643.2			
121.0	Top - Section 4	0.2500	30.330	23.867	2,728.4	19.63	121.32	73.1	177.2	0.0	181.4			
125.0		0.2500	29.630	23.312	2,542.4	19.14	118.52	73.6	169.0	0.0	321.1			
127.0		0.2500	29.280	23.035	2,452.7	18.89	117.12	73.9	165.0	0.0	157.7			
130.0		0.2500	28.756	22.618	2,322.1	18.52	115.02	74.3	159.0	0.0	233.0			
135.0		0.2500	27.881	21.924	2,114.8	17.90	111.52	74.9	149.4	0.0	378.9			
140.0		0.2500	27.006	21.230	1,920.3	17.28	108.03	75.6	140.0	0.0	367.1			
145.0		0.2500	26.132	20.536	1,738.1	16.67	104.53	76.2	131.0	0.0	355.3			
146.0		0.2500	25.957	20.398	1,703.1	16.54	103.83	76.2	129.2	0.0	69.6			
149.0	Bot - Section 6	0.2500	25.432	19.981	1,600.9	16.17	101.73	76.2	124.0	0.0	206.1			
150.0		0.2500	25.257	19.842	1,567.8	16.05	101.03	76.2	122.3	0.0	119.5			
152.5	Top - Section 5	0.1875	25.195	14.882	1,175.8	21.93	134.37	70.7	91.9	0.0	295.0			
155.0		0.1875	24.758	14.622	1,115.2	21.52	132.04	71.2	88.7	0.0	125.5			
160.0		0.1875	23.883	14.101	1,000.3	20.70	127.38	72.0	82.5	0.0	244.3			
165.0		0.1875	23.008	13.581	893.6	19.87	122.71	72.9	76.5	0.0	235.5			
167.0		0.1875	22.659	13.373	853.1	19.55	120.85	73.2	74.2	0.0	91.7			
170.0		0.1875	22.134	13.060	794.8	19.05	118.05	73.7	70.7	0.0	134.9			
171.0		0.1875	21.959	12.956	775.9	18.89	117.11	73.9	69.6	0.0	44.3			
175.0		0.1875	21.259	12.540	703.5	18.23	113.38	74.6	65.2	0.0	173.5			
180.0		0.1875	20.385	12.019	619.5	17.41	108.72	75.4	59.9	0.0	208.9			
183.0		0.1875	19.860	11.707	572.4	16.91	105.92	76.0	56.8	0.0	121.1			
											29,356.2			6,847.0

Load Case: 1.2D + 1.6W	97 mph with No Ice	28 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		195.1	0.0					0.0	0.0	195.1	0.0	0.0	0.0
5.00		331.3	1,544.9					0.0	400.8	331.3	1,945.7	0.0	0.0
7.00	Appurtenance(s)	338.6	610.0	72.2	0.0	0.0	90.7	51.3	334.4	462.0	1,035.1	0.0	0.0
10.00		534.7	906.5					76.9	501.6	611.6	1,408.1	0.0	0.0
15.00		658.3	1,488.2					128.2	835.9	786.5	2,324.2	0.0	0.0
20.00		486.7	1,459.9					128.2	835.9	614.9	2,295.8	0.0	0.0
22.50	Reinf. Top Reinf	319.8	719.3					64.1	418.0	383.9	1,137.3	0.0	0.0
25.00		379.2	712.2					64.1	418.0	443.3	1,130.2	0.0	0.0
28.50	Bot - Section 2	315.7	985.2					89.7	585.1	405.4	1,570.4	0.0	0.0
30.00		417.5	845.7					38.4	250.8	456.0	1,096.5	0.0	0.0
35.00	Top - Section 1	650.7	2,782.2					130.4	835.9	781.1	3,618.1	0.0	0.0
40.00		528.5	1,379.0					134.4	835.9	662.9	2,214.9	0.0	0.0
43.00	Reinf. Top Reinf	333.7	813.8					82.4	501.6	416.2	1,315.3	0.0	0.0
45.00		471.4	536.8					55.6	334.4	527.1	871.2	0.0	0.0
50.00		677.3	1,322.3					141.4	835.9	818.7	2,158.2	0.0	0.0
55.00		544.5	1,294.0					144.5	835.9	688.9	2,129.9	0.0	0.0
58.00	Bot - Section 3	343.8	762.8					88.0	501.6	431.9	1,264.3	0.0	0.0
60.00		383.0	888.5					59.2	334.4	442.3	1,222.9	0.0	0.0
63.50	Top - Section 2	348.4	1,535.8					104.7	585.1	453.1	2,120.9	0.0	0.0
65.00		452.8	282.5					45.3	250.8	498.0	533.3	0.0	0.0
70.00		695.6	928.0					152.5	835.9	848.0	1,763.9	0.0	0.0
75.00		693.2	906.7					154.8	835.9	848.0	1,742.6	0.0	0.0
80.00		689.5	885.5					157.1	835.9	846.6	1,721.4	0.0	0.0
85.00		548.6	864.2					159.2	835.9	707.9	1,700.1	0.0	0.0
88.00	Bot - Section 4	343.4	508.3					96.5	501.6	440.0	1,009.9	0.0	0.0
90.00		345.3	619.1					64.7	334.4	410.0	953.4	0.0	0.0
93.00	Top - Section 3	344.0	916.9					97.7	501.6	441.7	1,418.5	0.0	0.0
95.00		477.6	277.3					65.5	334.4	543.1	611.7	0.0	0.0
100.00		509.2	681.0					165.1	835.9	674.3	1,516.9	0.0	0.0
102.50	Reinf. Top	336.4	333.8					83.2	418.0	419.7	751.8	0.0	0.0
105.00		499.7	329.4					83.7	217.6	583.4	547.0	0.0	0.0
110.00		543.7	645.5					168.6	435.1	712.3	1,080.7	0.0	0.0
115.00		270.5	627.8					0.0	435.1	270.5	1,063.0	0.0	0.0
116.50	Bot - Section 5	198.2	184.9					0.0	130.5	198.2	315.4	0.0	0.0
120.00		179.0	771.8					0.0	304.6	179.0	1,076.4	0.0	0.0
121.00	Top - Section 4	197.0	217.6					0.0	87.0	197.0	304.7	0.0	0.0
125.00		235.6	385.3					0.0	348.1	235.6	733.4	0.0	0.0
127.00	Appurtenance(s)	195.4	189.3	4,071.7	0.0	0.0	3,435.1	0.0	174.0	4,267.1	3,798.4	0.0	0.0
130.00		311.1	279.6					0.0	217.5	311.1	497.1	0.0	0.0
135.00		386.3	454.7					0.0	362.5	386.3	817.2	0.0	0.0
140.00		383.0	440.5					0.0	362.5	383.0	803.1	0.0	0.0
145.00	Appurtenance(s)	228.5	426.4	103.8	0.0	0.0	240.0	0.0	362.5	332.3	1,028.9	0.0	0.0
146.00	Appurtenance(s)	151.2	83.6	627.5	0.0	0.0	238.3	0.0	72.5	778.7	394.4	0.0	0.0
149.00	Bot - Section 6	151.4	247.3					0.0	164.4	151.4	411.7	0.0	0.0
150.00		133.2	143.4					0.0	54.8	133.2	198.1	0.0	0.0
152.50	Top - Section 5	189.0	354.0					0.0	137.0	189.0	491.0	0.0	0.0
155.00		280.3	150.6					0.0	137.0	280.3	287.6	0.0	0.0
160.00		370.5	293.2					0.0	274.0	370.5	567.2	0.0	0.0

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:28 AM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W

97 mph with No Ice

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

165.00		257.2	282.6					0.0	274.0	257.2	556.5	0.0	0.0
167.00	Appurtenance(s)	181.9	110.1	5,103.3	0.0	0.0	5,033.6	0.0	109.6	5,285.2	5,253.3	0.0	0.0
170.00		144.9	161.9					0.0	97.7	144.9	259.6	0.0	0.0
171.00	Appurtenance(s)	149.6	53.1	489.3	0.0	0.0	95.0	0.0	32.6	638.8	180.7	0.0	0.0
175.00		252.8	208.2					0.0	106.7	252.8	314.9	0.0	0.0
180.00		221.5	250.7					0.0	133.3	221.5	384.0	0.0	0.0
183.00	Appurtenance(s)	82.2	145.3	4,538.6	0.0	5,066.2	4,385.4	0.0	80.0	4,620.8	4,610.7	0.0	0.0
									Totals:	37,969.5	70,557.4	0.00	0.00

Load Case: 1.2D + 1.6W

97 mph with No Ice

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-70.49	-37.90	0.00	-4,458.86	0.00	4,458.86	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.784
5.00	-68.45	-37.74	0.00	-4,269.35	0.00	4,269.35	4,284.85	2,142.42	8,295.82	4,154.08	0.11	-0.21	0.774
7.00	-67.35	-37.40	0.00	-4,193.86	0.00	4,193.86	4,253.12	2,126.56	8,172.78	4,092.46	0.22	-0.29	0.770
10.00	-65.83	-36.97	0.00	-4,081.67	0.00	4,081.67	4,205.53	2,102.76	7,989.95	4,000.91	0.44	-0.42	0.763
15.00	-63.38	-36.40	0.00	-3,896.81	0.00	3,896.81	4,126.21	2,063.10	7,689.82	3,850.62	0.99	-0.63	0.752
20.00	-61.00	-35.92	0.00	-3,714.83	0.00	3,714.83	4,046.89	2,023.44	7,395.44	3,703.21	1.76	-0.84	0.741
22.50	-59.80	-35.63	0.00	-3,625.03	0.00	3,625.03	4,007.23	2,003.61	7,250.40	3,630.59	2.23	-0.94	0.735
22.50	-59.80	-35.63	0.00	-3,625.03	0.00	3,625.03	4,007.23	2,003.61	7,250.40	3,630.59	2.23	-0.94	0.735
25.00	-58.60	-35.30	0.00	-3,535.95	0.00	3,535.95	3,967.57	1,983.78	7,106.80	3,558.68	2.75	-1.05	0.729
28.50	-56.97	-34.97	0.00	-3,412.41	0.00	3,412.41	3,912.04	1,956.02	6,908.17	3,459.22	3.57	-1.20	0.720
30.00	-55.80	-34.62	0.00	-3,359.96	0.00	3,359.96	3,888.25	1,944.12	6,823.91	3,417.03	3.96	-1.26	0.708
35.00	-52.08	-33.94	0.00	-3,186.86	0.00	3,186.86	3,899.62	1,949.81	6,864.12	3,437.16	5.39	-1.47	0.675
40.00	-49.79	-33.36	0.00	-3,017.14	0.00	3,017.14	3,820.30	1,910.15	6,586.15	3,297.97	7.05	-1.68	0.661
43.00	-48.43	-32.99	0.00	-2,917.05	0.00	2,917.05	3,772.71	1,886.36	6,422.13	3,215.84	8.14	-1.80	0.653
43.00	-48.43	-32.99	0.00	-2,917.05	0.00	2,917.05	3,772.71	1,886.36	6,422.13	3,215.84	8.14	-1.80	0.653
45.00	-47.50	-32.55	0.00	-2,851.06	0.00	2,851.06	3,740.98	1,870.49	6,313.93	3,161.66	8.91	-1.88	0.647
50.00	-45.26	-31.82	0.00	-2,688.30	0.00	2,688.30	3,661.66	1,830.83	6,047.45	3,028.22	10.99	-2.08	0.631
55.00	-43.07	-31.17	0.00	-2,529.22	0.00	2,529.22	3,582.34	1,791.17	5,786.72	2,897.66	13.27	-2.27	0.615
58.00	-41.77	-30.76	0.00	-2,435.72	0.00	2,435.72	3,534.75	1,767.38	5,633.04	2,820.71	14.74	-2.39	0.606
60.00	-40.51	-30.34	0.00	-2,374.21	0.00	2,374.21	3,503.02	1,751.51	5,531.73	2,769.98	15.76	-2.47	0.593
63.50	-38.36	-29.86	0.00	-2,268.03	0.00	2,268.03	3,173.44	1,586.72	5,061.87	2,534.70	17.62	-2.61	0.569
65.00	-37.78	-29.43	0.00	-2,223.25	0.00	2,223.25	3,152.76	1,576.38	4,994.62	2,501.02	18.45	-2.67	0.564
70.00	-35.95	-28.63	0.00	-2,076.11	0.00	2,076.11	3,081.37	1,540.68	4,769.94	2,388.51	21.36	-2.89	0.545
75.00	-34.15	-27.82	0.00	-1,932.96	0.00	1,932.96	3,009.98	1,504.99	4,550.42	2,278.59	24.50	-3.11	0.526
80.00	-32.38	-27.00	0.00	-1,793.84	0.00	1,793.84	2,938.59	1,469.30	4,336.07	2,171.26	27.87	-3.32	0.506
85.00	-30.65	-26.28	0.00	-1,658.84	0.00	1,658.84	2,867.21	1,433.60	4,126.90	2,066.52	31.46	-3.53	0.485
88.00	-29.62	-25.84	0.00	-1,579.99	0.00	1,579.99	2,824.37	1,412.19	4,003.88	2,004.91	33.72	-3.66	0.472
90.00	-28.65	-25.42	0.00	-1,528.32	0.00	1,528.32	2,795.82	1,397.91	3,922.90	1,964.36	35.27	-3.74	0.458
93.00	-27.22	-24.93	0.00	-1,452.07	0.00	1,452.07	2,304.06	1,152.03	3,254.27	1,629.55	37.66	-3.86	0.493
95.00	-26.58	-24.41	0.00	-1,402.21	0.00	1,402.21	2,286.90	1,143.45	3,196.90	1,600.83	39.29	-3.94	0.482
100.00	-25.06	-23.70	0.00	-1,280.15	0.00	1,280.15	2,243.44	1,121.72	3,054.90	1,529.72	43.54	-4.15	0.453
102.50	-24.29	-23.27	0.00	-1,220.90	0.00	1,220.90	2,221.40	1,110.70	2,984.67	1,494.55	45.74	-4.26	0.438
102.50	-24.29	-23.27	0.00	-1,220.90	0.00	1,220.90	2,221.40	1,110.70	2,984.67	1,494.55	45.74	-4.26	0.828
105.00	-23.70	-22.75	0.00	-1,162.72	0.00	1,162.72	2,198.14	1,099.07	2,913.61	1,458.97	47.99	-4.36	0.808
110.00	-22.54	-22.10	0.00	-1,048.98	0.00	1,048.98	2,138.65	1,069.33	2,757.31	1,380.70	52.75	-4.73	0.771
115.00	-21.41	-21.82	0.00	-938.50	0.00	938.50	2,079.16	1,039.58	2,605.31	1,304.59	57.89	-5.09	0.730
116.50	-21.05	-21.66	0.00	-905.77	0.00	905.77	2,061.32	1,030.66	2,560.55	1,282.18	59.51	-5.20	0.717
120.00	-19.93	-21.44	0.00	-829.94	0.00	829.94	2,019.67	1,009.84	2,457.62	1,230.64	63.41	-5.45	0.685
121.00	-19.58	-21.28	0.00	-808.50	0.00	808.50	1,570.79	785.40	1,940.61	971.75	64.56	-5.52	0.845
125.00	-18.80	-21.04	0.00	-723.40	0.00	723.40	1,545.06	772.53	1,864.04	933.41	69.29	-5.79	0.788
127.00	-15.40	-16.46	0.00	-681.33	0.00	681.33	1,531.99	766.00	1,826.09	914.40	71.75	-5.95	0.756
130.00	-14.86	-16.17	0.00	-631.96	0.00	631.96	1,512.16	756.08	1,769.59	886.11	75.56	-6.18	0.723
135.00	-13.99	-15.78	0.00	-551.10	0.00	551.10	1,478.46	739.23	1,676.61	839.55	82.21	-6.54	0.666
140.00	-13.15	-15.39	0.00	-472.18	0.00	472.18	1,443.96	721.98	1,585.19	793.77	89.23	-6.88	0.604
145.00	-12.12	-14.97	0.00	-395.24	0.00	395.24	1,408.39	704.19	1,495.13	748.68	96.60	-7.21	0.537
146.00	-11.80	-14.17	0.00	-380.27	0.00	380.27	1,398.87	699.44	1,474.90	738.54	98.11	-7.27	0.524
149.00	-11.38	-13.99	0.00	-337.75	0.00	337.75	1,370.32	685.16	1,415.01	708.56	102.72	-7.45	0.485
150.00	-11.18	-13.86	0.00	-323.76	0.00	323.76	1,360.80	680.40	1,395.33	698.70	104.28	-7.51	0.472
152.50	-10.68	-13.63	0.00	-289.12	0.00	289.12	947.27	473.64	973.73	487.59	108.24	-7.65	0.605
155.00	-10.38	-13.35	0.00	-255.05	0.00	255.05	936.35	468.18	945.55	473.48	112.27	-7.78	0.551
160.00	-9.82	-12.95	0.00	-188.29	0.00	188.29	913.91	456.96	889.79	445.55	120.55	-8.06	0.434

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:28 AM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W

97 mph with No Ice

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

165.00	-9.27	-12.64	0.00	-123.54	0.00	123.54	890.67	445.33	834.90	418.07	129.08	-8.28	0.307
167.00	-4.83	-6.66	0.00	-98.27	0.00	98.27	881.14	440.57	813.20	407.21	132.56	-8.35	0.247
170.00	-4.59	-6.48	0.00	-78.30	0.00	78.30	866.62	433.31	780.97	391.06	137.82	-8.44	0.206
171.00	-4.50	-5.83	0.00	-71.82	0.00	71.82	861.71	430.86	770.30	385.72	139.58	-8.47	0.192
175.00	-4.21	-5.53	0.00	-48.52	0.00	48.52	841.76	420.88	728.08	364.58	146.69	-8.56	0.138
180.00	-3.86	-5.26	0.00	-20.85	0.00	20.85	816.11	408.05	676.33	338.67	155.66	-8.63	0.066
183.00	0.00	-4.62	0.00	-5.07	0.00	5.07	800.33	400.16	645.87	323.41	161.06	-8.64	0.016

Load Case: 0.9D + 1.6W	97 mph with No Ice (Reduced DL)	28 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		186.8	0.0					0.0	0.0	186.8	0.0	0.0	0.0
5.00		323.0	1,158.7					0.0	300.6	323.0	1,459.3	0.0	0.0
7.00	Appurtenance(s)	338.6	457.5	72.2	0.0	0.0	68.0	51.3	250.8	462.0	776.3	0.0	0.0
10.00		534.7	679.9					76.9	376.2	611.6	1,056.1	0.0	0.0
15.00		658.3	1,116.2					128.2	626.9	786.5	1,743.1	0.0	0.0
20.00		486.7	1,094.9					128.2	626.9	614.9	1,721.9	0.0	0.0
22.50	Reinf. Top Reinf	319.8	539.5					64.1	313.5	383.9	853.0	0.0	0.0
25.00		379.2	534.2					64.1	313.5	443.3	847.7	0.0	0.0
28.50	Bot - Section 2	315.7	738.9					89.7	438.9	405.4	1,177.8	0.0	0.0
30.00		417.5	634.3					38.4	188.1	456.0	822.4	0.0	0.0
35.00	Top - Section 1	650.7	2,086.6					130.4	626.9	781.1	2,713.6	0.0	0.0
40.00		528.5	1,034.2					134.4	626.9	662.9	1,661.2	0.0	0.0
43.00	Reinf. Top Reinf	333.7	610.3					82.4	376.2	416.2	986.5	0.0	0.0
45.00		471.4	402.6					55.6	250.8	527.1	653.4	0.0	0.0
50.00		677.3	991.7					141.4	626.9	818.7	1,618.7	0.0	0.0
55.00		544.5	970.5					144.5	626.9	688.9	1,597.4	0.0	0.0
58.00	Bot - Section 3	343.8	572.1					88.0	376.2	431.9	948.2	0.0	0.0
60.00		383.0	666.4					59.2	250.8	442.3	917.1	0.0	0.0
63.50	Top - Section 2	348.4	1,151.8					104.7	438.9	453.1	1,590.7	0.0	0.0
65.00		452.8	211.9					45.3	188.1	498.0	400.0	0.0	0.0
70.00		695.6	696.0					152.5	626.9	848.0	1,322.9	0.0	0.0
75.00		693.2	680.0					154.8	626.9	848.0	1,307.0	0.0	0.0
80.00		689.5	664.1					157.1	626.9	846.6	1,291.0	0.0	0.0
85.00		548.6	648.2					159.2	626.9	707.9	1,275.1	0.0	0.0
88.00	Bot - Section 4	343.4	381.2					96.5	376.2	440.0	757.4	0.0	0.0
90.00		345.3	464.3					64.7	250.8	410.0	715.1	0.0	0.0
93.00	Top - Section 3	344.0	687.7					97.7	376.2	441.7	1,063.8	0.0	0.0
95.00		477.6	208.0					65.5	250.8	543.1	458.8	0.0	0.0
100.00		509.2	510.7					165.1	626.9	674.3	1,137.7	0.0	0.0
102.50	Reinf. Top	336.4	250.4					83.2	313.5	419.7	563.9	0.0	0.0
105.00		499.7	247.1					83.7	163.2	583.4	410.2	0.0	0.0
110.00		509.3	484.2					168.6	326.3	677.9	810.5	0.0	0.0
115.00		229.9	470.9					0.0	326.3	229.9	797.2	0.0	0.0
116.50	Bot - Section 5	176.5	138.7					0.0	97.9	176.5	236.6	0.0	0.0
120.00		158.9	578.8					0.0	228.4	158.9	807.3	0.0	0.0
121.00	Top - Section 4	174.4	163.2					0.0	65.3	174.4	228.5	0.0	0.0
125.00		208.1	289.0					0.0	261.1	208.1	550.0	0.0	0.0
127.00	Appurtenance(s)	171.2	141.9	4,071.7	0.0	0.0	2,576.3	0.0	130.5	4,242.9	2,848.8	0.0	0.0
130.00		270.3	209.7					0.0	163.1	270.3	372.9	0.0	0.0
135.00		332.4	341.0					0.0	271.9	332.4	612.9	0.0	0.0
140.00		325.4	330.4					0.0	271.9	325.4	602.3	0.0	0.0
145.00	Appurtenance(s)	192.6	319.8	103.8	0.0	0.0	180.0	0.0	271.9	296.4	771.7	0.0	0.0
146.00	Appurtenance(s)	126.0	62.7	627.5	0.0	0.0	178.7	0.0	54.4	753.6	295.8	0.0	0.0
149.00	Bot - Section 6	125.9	185.5					0.0	123.3	125.9	308.8	0.0	0.0
150.00		109.8	107.5					0.0	41.1	109.8	148.6	0.0	0.0
152.50	Top - Section 5	155.5	265.5					0.0	102.7	155.5	368.3	0.0	0.0
155.00		228.8	112.9					0.0	102.7	228.8	215.7	0.0	0.0
160.00		298.9	219.9					0.0	205.5	298.9	425.4	0.0	0.0

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:37 AM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

165.00		205.2	211.9					0.0	205.5	205.2	417.4	0.0	0.0
167.00	Appurtenance(s)	143.1	82.5	5,103.3	0.0	0.0	3,775.2	0.0	82.2	5,246.4	3,940.0	0.0	0.0
170.00		113.5	121.4					0.0	73.3	113.5	194.7	0.0	0.0
171.00	Appurtenance(s)	138.8	39.8	489.3	0.0	0.0	71.3	0.0	24.4	628.0	135.5	0.0	0.0
175.00		244.9	156.2					0.0	80.0	244.9	236.2	0.0	0.0
180.00		212.6	188.0					0.0	100.0	212.6	288.0	0.0	0.0
183.00	Appurtenance(s)	78.3	109.0	4,538.6	0.0	5,066.2	3,289.1	0.0	60.0	4,617.0	3,458.1	0.0	0.0
									Totals:	37,189.2	52,918.0	0.00	0.00

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

28 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	-52.85	-37.10	0.00	-4,268.07	0.00	4,268.07	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.747
5.00	-51.30	-36.89	0.00	-4,082.60	0.00	4,082.60	4,284.85	2,142.42	8,295.82	4,154.08	0.11	-0.20	0.737
7.00	-50.47	-36.52	0.00	-4,008.81	0.00	4,008.81	4,253.12	2,126.56	8,172.78	4,092.46	0.21	-0.28	0.733
10.00	-49.31	-36.04	0.00	-3,899.26	0.00	3,899.26	4,205.53	2,102.76	7,989.95	4,000.91	0.42	-0.40	0.727
15.00	-47.45	-35.40	0.00	-3,719.07	0.00	3,719.07	4,126.21	2,063.10	7,689.82	3,850.62	0.95	-0.60	0.716
20.00	-45.65	-34.89	0.00	-3,542.07	0.00	3,542.07	4,046.89	2,023.44	7,395.44	3,703.21	1.68	-0.80	0.704
22.50	-44.74	-34.57	0.00	-3,454.85	0.00	3,454.85	4,007.23	2,003.61	7,250.40	3,630.59	2.13	-0.90	0.698
22.50	-44.74	-34.57	0.00	-3,454.85	0.00	3,454.85	4,007.23	2,003.61	7,250.40	3,630.59	2.13	-0.90	0.698
25.00	-43.83	-34.20	0.00	-3,368.43	0.00	3,368.43	3,967.57	1,983.78	7,106.80	3,558.68	2.63	-1.00	0.692
28.50	-42.60	-33.85	0.00	-3,248.72	0.00	3,248.72	3,912.04	1,956.02	6,908.17	3,459.22	3.41	-1.14	0.683
30.00	-41.71	-33.48	0.00	-3,197.94	0.00	3,197.94	3,888.25	1,944.12	6,823.91	3,417.03	3.78	-1.20	0.671
35.00	-38.90	-32.77	0.00	-3,030.57	0.00	3,030.57	3,899.62	1,949.81	6,864.12	3,437.16	5.15	-1.40	0.640
40.00	-37.17	-32.16	0.00	-2,866.73	0.00	2,866.73	3,820.30	1,910.15	6,586.15	3,297.97	6.73	-1.60	0.626
43.00	-36.14	-31.78	0.00	-2,770.25	0.00	2,770.25	3,772.71	1,886.36	6,422.13	3,215.84	7.77	-1.72	0.618
43.00	-36.14	-31.78	0.00	-2,770.25	0.00	2,770.25	3,772.71	1,886.36	6,422.13	3,215.84	7.77	-1.72	0.618
45.00	-35.43	-31.31	0.00	-2,706.69	0.00	2,706.69	3,740.98	1,870.49	6,313.93	3,161.66	8.51	-1.79	0.612
50.00	-33.74	-30.55	0.00	-2,550.13	0.00	2,550.13	3,661.66	1,830.83	6,047.45	3,028.22	10.48	-1.98	0.597
55.00	-32.09	-29.89	0.00	-2,397.38	0.00	2,397.38	3,582.34	1,791.17	5,786.72	2,897.66	12.66	-2.17	0.581
58.00	-31.11	-29.47	0.00	-2,307.71	0.00	2,307.71	3,534.75	1,767.38	5,633.04	2,820.71	14.05	-2.28	0.572
60.00	-30.16	-29.05	0.00	-2,248.77	0.00	2,248.77	3,503.02	1,751.51	5,531.73	2,769.98	15.03	-2.35	0.560
63.50	-28.55	-28.57	0.00	-2,147.10	0.00	2,147.10	3,173.44	1,586.72	5,061.87	2,534.70	16.80	-2.48	0.537
65.00	-28.10	-28.12	0.00	-2,104.25	0.00	2,104.25	3,152.76	1,576.38	4,994.62	2,501.02	17.59	-2.54	0.532
70.00	-26.72	-27.31	0.00	-1,963.63	0.00	1,963.63	3,081.37	1,540.68	4,769.94	2,388.51	20.36	-2.75	0.514
75.00	-25.37	-26.49	0.00	-1,827.07	0.00	1,827.07	3,009.98	1,504.99	4,550.42	2,278.59	23.35	-2.95	0.495
80.00	-24.03	-25.66	0.00	-1,694.62	0.00	1,694.62	2,938.59	1,469.30	4,336.07	2,171.26	26.55	-3.16	0.476
85.00	-22.73	-24.94	0.00	-1,566.32	0.00	1,566.32	2,867.21	1,433.60	4,126.90	2,066.52	29.96	-3.36	0.457
88.00	-21.96	-24.50	0.00	-1,491.49	0.00	1,491.49	2,824.37	1,412.19	4,003.88	2,004.91	32.11	-3.47	0.444
90.00	-21.23	-24.08	0.00	-1,442.50	0.00	1,442.50	2,795.82	1,397.91	3,922.90	1,964.36	33.58	-3.55	0.431
93.00	-20.16	-23.61	0.00	-1,370.25	0.00	1,370.25	2,304.06	1,152.03	3,254.27	1,629.55	35.85	-3.67	0.464
95.00	-19.68	-23.08	0.00	-1,323.04	0.00	1,323.04	2,286.90	1,143.45	3,196.90	1,600.83	37.40	-3.74	0.453
100.00	-18.53	-22.38	0.00	-1,207.63	0.00	1,207.63	2,243.44	1,121.72	3,054.90	1,529.72	41.43	-3.94	0.426
102.50	-17.96	-21.95	0.00	-1,151.68	0.00	1,151.68	2,221.40	1,110.70	2,984.67	1,494.55	43.52	-4.04	0.412
102.50	-17.96	-21.95	0.00	-1,151.68	0.00	1,151.68	2,221.40	1,110.70	2,984.67	1,494.55	43.52	-4.04	0.779
105.00	-17.51	-21.41	0.00	-1,096.80	0.00	1,096.80	2,198.14	1,099.07	2,913.61	1,458.97	45.66	-4.13	0.760
110.00	-16.63	-20.78	0.00	-989.74	0.00	989.74	2,138.65	1,069.33	2,757.31	1,380.70	50.17	-4.49	0.725
115.00	-15.77	-20.54	0.00	-885.87	0.00	885.87	2,079.16	1,039.58	2,605.31	1,304.59	55.05	-4.83	0.687
116.50	-15.49	-20.39	0.00	-855.06	0.00	855.06	2,061.32	1,030.66	2,560.55	1,282.18	56.58	-4.93	0.675
120.00	-14.65	-20.20	0.00	-783.69	0.00	783.69	2,019.67	1,009.84	2,457.62	1,230.64	60.28	-5.17	0.644
121.00	-14.38	-20.05	0.00	-763.49	0.00	763.49	1,570.79	785.40	1,940.61	971.75	61.37	-5.23	0.795
125.00	-13.78	-19.84	0.00	-683.30	0.00	683.30	1,545.06	772.53	1,864.04	933.41	65.86	-5.49	0.742
127.00	-11.31	-15.37	0.00	-643.62	0.00	643.62	1,531.99	766.00	1,826.09	914.40	68.19	-5.64	0.712
130.00	-10.89	-15.12	0.00	-597.50	0.00	597.50	1,512.16	756.08	1,769.59	886.11	71.79	-5.85	0.682
135.00	-10.23	-14.79	0.00	-521.89	0.00	521.89	1,478.46	739.23	1,676.61	839.55	78.10	-6.20	0.629
140.00	-9.59	-14.45	0.00	-447.96	0.00	447.96	1,443.96	721.98	1,585.19	793.77	84.75	-6.52	0.571
145.00	-8.81	-14.09	0.00	-375.71	0.00	375.71	1,408.39	704.19	1,495.13	748.68	91.73	-6.83	0.508
146.00	-8.58	-13.33	0.00	-361.62	0.00	361.62	1,398.87	699.44	1,474.90	738.54	93.16	-6.89	0.496
149.00	-8.26	-13.18	0.00	-321.64	0.00	321.64	1,370.32	685.16	1,415.01	708.56	97.53	-7.06	0.460
150.00	-8.11	-13.07	0.00	-308.46	0.00	308.46	1,360.80	680.40	1,395.33	698.70	99.02	-7.11	0.448
152.50	-7.73	-12.88	0.00	-275.79	0.00	275.79	947.27	473.64	973.73	487.59	102.77	-7.25	0.575
155.00	-7.50	-12.66	0.00	-243.58	0.00	243.58	936.35	468.18	945.55	473.48	106.59	-7.37	0.523
160.00	-7.07	-12.33	0.00	-180.30	0.00	180.30	913.91	456.96	889.79	445.55	114.44	-7.64	0.413

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:37 AM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

165.00	-6.66	-12.09	0.00	-118.62	0.00	118.62	890.67	445.33	834.90	418.07	122.54	-7.85	0.292
167.00	-3.46	-6.36	0.00	-94.44	0.00	94.44	881.14	440.57	813.20	407.21	125.83	-7.92	0.236
170.00	-3.28	-6.22	0.00	-75.37	0.00	75.37	866.62	433.31	780.97	391.06	130.82	-8.01	0.197
171.00	-3.23	-5.58	0.00	-69.15	0.00	69.15	861.71	430.86	770.30	385.72	132.50	-8.03	0.183
175.00	-3.02	-5.31	0.00	-46.82	0.00	46.82	841.76	420.88	728.08	364.58	139.24	-8.12	0.132
180.00	-2.76	-5.06	0.00	-20.25	0.00	20.25	816.11	408.05	676.33	338.67	147.76	-8.19	0.063
183.00	0.00	-4.62	0.00	-5.07	0.00	5.07	800.33	400.16	645.87	323.41	152.89	-8.20	0.016

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	29 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		60.0	0.0					0.0	0.0	60.0	0.0	0.0	0.0
5.00		83.8	1,899.9					0.0	470.4	83.8	2,370.3	0.0	0.0
7.00	Appurtenance(s)	59.2	764.3	17.4	0.0	0.0	23.2	16.5	501.9	93.1	1,289.3	0.0	0.0
10.00		93.8	1,143.7					25.1	762.3	118.9	1,906.1	0.0	0.0
15.00		115.8	1,892.0					42.5	1,289.1	158.3	3,181.1	0.0	0.0
20.00		85.8	1,870.2					43.1	1,306.0	128.9	3,176.3	0.0	0.0
22.50	Reinf. Top Reinf	56.5	926.7					21.8	658.1	78.2	1,584.8	0.0	0.0
25.00		67.1	920.0					21.9	661.1	89.0	1,581.0	0.0	0.0
28.50	Bot - Section 2	55.9	1,275.7					30.8	930.0	86.7	2,205.7	0.0	0.0
30.00		74.0	973.4					13.3	400.1	87.2	1,373.5	0.0	0.0
35.00	Top - Section 1	115.4	3,204.3					45.5	1,339.4	160.9	4,543.7	0.0	0.0
40.00		93.9	1,799.0					47.7	1,347.5	141.6	3,146.5	0.0	0.0
43.00	Reinf. Top Reinf	59.4	1,065.4					29.6	812.0	89.0	1,877.5	0.0	0.0
45.00		84.1	704.3					20.1	542.7	104.2	1,247.0	0.0	0.0
50.00		120.9	1,735.7					51.6	1,361.3	172.5	3,097.0	0.0	0.0
55.00		97.4	1,703.0					53.4	1,367.3	150.8	3,070.3	0.0	0.0
58.00	Bot - Section 3	61.6	1,007.0					32.8	823.0	94.4	1,830.0	0.0	0.0
60.00		68.6	1,053.6					22.2	549.7	90.8	1,603.4	0.0	0.0
63.50	Top - Section 2	62.5	1,821.8					39.4	964.0	101.9	2,785.8	0.0	0.0
65.00		81.3	404.9					17.1	413.9	98.5	818.7	0.0	0.0
70.00		125.2	1,329.0					58.0	1,382.6	183.2	2,711.6	0.0	0.0
75.00		125.0	1,301.8					59.4	1,387.1	184.5	2,688.9	0.0	0.0
80.00		124.7	1,274.3					60.8	1,391.3	185.4	2,665.7	0.0	0.0
85.00		99.4	1,246.6					62.1	1,395.3	161.5	2,641.9	0.0	0.0
88.00	Bot - Section 4	62.3	735.7					37.8	839.0	100.1	1,574.7	0.0	0.0
90.00		62.7	772.2					25.5	560.1	88.1	1,332.3	0.0	0.0
93.00	Top - Section 3	62.5	1,144.0					38.6	841.2	101.1	1,985.2	0.0	0.0
95.00		87.0	427.7					25.9	561.5	112.9	989.2	0.0	0.0
100.00		92.8	1,049.2					65.6	1,406.1	158.5	2,455.3	0.0	0.0
102.50	Reinf. Top	61.5	516.4					33.2	704.3	94.7	1,220.7	0.0	0.0
105.00		91.5	510.1					33.5	504.7	125.0	1,014.8	0.0	0.0
110.00		121.0	999.0					67.8	1,011.8	188.8	2,010.8	0.0	0.0
115.00		78.0	973.7					0.0	929.0	78.0	1,902.7	0.0	0.0
116.50	Bot - Section 5	60.0	288.1					0.0	274.4	60.0	562.6	0.0	0.0
120.00		54.1	1,012.4					0.0	641.2	54.1	1,653.6	0.0	0.0
121.00	Top - Section 4	59.4	286.1					0.0	183.4	59.4	469.6	0.0	0.0
125.00		71.0	653.9					0.0	734.6	71.0	1,388.5	0.0	0.0
127.00	Appurtenance(s)	58.6	322.4	909.9	0.0	0.0	7,141.1	0.0	367.8	968.5	7,831.4	0.0	0.0
130.00		92.7	476.4					0.0	508.9	92.7	985.2	0.0	0.0
135.00		114.4	774.2					0.0	849.9	114.4	1,624.1	0.0	0.0
140.00		112.4	751.8					0.0	852.0	112.4	1,603.8	0.0	0.0
145.00	Appurtenance(s)	66.7	729.3	35.2	0.0	0.0	487.3	0.0	854.1	101.9	2,070.6	0.0	0.0
146.00	Appurtenance(s)	43.8	143.9	124.0	0.0	0.0	863.4	0.0	171.1	167.8	1,178.4	0.0	0.0
149.00	Bot - Section 6	43.7	425.2					0.0	329.9	43.7	755.1	0.0	0.0
150.00		38.2	203.2					0.0	110.1	38.2	313.2	0.0	0.0
152.50	Top - Section 5	54.2	501.3					0.0	275.4	54.2	776.7	0.0	0.0
155.00		80.0	295.8					0.0	275.6	80.0	571.4	0.0	0.0
160.00		104.9	574.7					0.0	552.1	104.9	1,126.8	0.0	0.0

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:46 AM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

29 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

165.00		72.3	555.3					0.0	553.2	72.3	1,108.6	0.0	0.0
167.00	Appurtenance(s)	50.6	217.9	4,203.1	0.0	0.0	24,229.1	0.0	221.6	4,253.8	24,668.6	0.0	0.0
170.00		40.2	320.4					0.0	266.0	40.2	586.4	0.0	0.0
171.00	Appurtenance(s)	49.4	105.6	101.0	0.0	0.0	453.9	0.0	88.8	150.4	648.3	0.0	0.0
175.00		87.5	412.4					0.0	243.3	87.5	655.6	0.0	0.0
180.00		76.3	496.9					0.0	304.7	76.3	801.6	0.0	0.0
183.00	Appurtenance(s)	28.2	289.9	983.2	0.0	963.9	9,175.9	0.0	183.1	1,011.4	9,648.9	0.0	0.0
									Totals:	11,765.3	128,910.	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

29 Iterations

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

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00
 Ice Importance Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-128.90	-11.80	0.00	-1,819.06	0.00	1,819.06	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.338
5.00	-126.52	-11.85	0.00	-1,760.05	0.00	1,760.05	4,284.85	2,142.42	8,295.82	4,154.08	0.05	-0.08	0.337
7.00	-125.22	-11.85	0.00	-1,736.36	0.00	1,736.36	4,253.12	2,126.56	8,172.78	4,092.46	0.09	-0.12	0.337
10.00	-123.30	-11.88	0.00	-1,700.81	0.00	1,700.81	4,205.53	2,102.76	7,989.95	4,000.91	0.18	-0.17	0.336
15.00	-120.10	-11.89	0.00	-1,641.44	0.00	1,641.44	4,126.21	2,063.10	7,689.82	3,850.62	0.41	-0.26	0.335
20.00	-116.91	-11.88	0.00	-1,581.99	0.00	1,581.99	4,046.89	2,023.44	7,395.44	3,703.21	0.73	-0.35	0.333
22.50	-115.32	-11.88	0.00	-1,552.29	0.00	1,552.29	4,007.23	2,003.61	7,250.40	3,630.59	0.92	-0.39	0.332
22.50	-115.32	-11.88	0.00	-1,552.29	0.00	1,552.29	4,007.23	2,003.61	7,250.40	3,630.59	0.92	-0.39	0.332
25.00	-113.73	-11.89	0.00	-1,522.58	0.00	1,522.58	3,967.57	1,983.78	7,106.80	3,558.68	1.14	-0.44	0.331
28.50	-111.51	-11.88	0.00	-1,480.95	0.00	1,480.95	3,912.04	1,956.02	6,908.17	3,459.22	1.49	-0.50	0.329
30.00	-110.13	-11.89	0.00	-1,463.14	0.00	1,463.14	3,888.25	1,944.12	6,823.91	3,417.03	1.65	-0.53	0.325
35.00	-105.57	-11.86	0.00	-1,403.67	0.00	1,403.67	3,899.62	1,949.81	6,864.12	3,437.16	2.26	-0.62	0.314
40.00	-102.41	-11.81	0.00	-1,344.39	0.00	1,344.39	3,820.30	1,910.15	6,586.15	3,297.97	2.96	-0.72	0.311
43.00	-100.52	-11.77	0.00	-1,308.97	0.00	1,308.97	3,772.71	1,886.36	6,422.13	3,215.84	3.42	-0.77	0.309
43.00	-100.52	-11.77	0.00	-1,308.97	0.00	1,308.97	3,772.71	1,886.36	6,422.13	3,215.84	3.42	-0.77	0.309
45.00	-99.26	-11.76	0.00	-1,285.43	0.00	1,285.43	3,740.98	1,870.49	6,313.93	3,161.66	3.75	-0.81	0.307
50.00	-96.15	-11.69	0.00	-1,226.62	0.00	1,226.62	3,661.66	1,830.83	6,047.45	3,028.22	4.65	-0.90	0.304
55.00	-93.07	-11.61	0.00	-1,168.15	0.00	1,168.15	3,582.34	1,791.17	5,786.72	2,897.66	5.63	-0.99	0.300
58.00	-91.23	-11.56	0.00	-1,133.32	0.00	1,133.32	3,534.75	1,767.38	5,633.04	2,820.71	6.27	-1.04	0.297
60.00	-89.62	-11.52	0.00	-1,110.20	0.00	1,110.20	3,503.02	1,751.51	5,531.73	2,769.98	6.71	-1.08	0.292
63.50	-86.83	-11.43	0.00	-1,069.90	0.00	1,069.90	3,173.44	1,586.72	5,061.87	2,534.70	7.53	-1.14	0.284
65.00	-86.00	-11.42	0.00	-1,052.75	0.00	1,052.75	3,152.76	1,576.38	4,994.62	2,501.02	7.89	-1.17	0.282
70.00	-83.27	-11.33	0.00	-995.68	0.00	995.68	3,081.37	1,540.68	4,769.94	2,388.51	9.17	-1.27	0.276
75.00	-80.57	-11.23	0.00	-939.04	0.00	939.04	3,009.98	1,504.99	4,550.42	2,278.59	10.56	-1.38	0.270
80.00	-77.89	-11.12	0.00	-882.91	0.00	882.91	2,938.59	1,469.30	4,336.07	2,171.26	12.06	-1.48	0.263
85.00	-75.23	-11.00	0.00	-827.32	0.00	827.32	2,867.21	1,433.60	4,126.90	2,066.52	13.68	-1.59	0.256
88.00	-73.65	-10.92	0.00	-794.33	0.00	794.33	2,824.37	1,412.19	4,003.88	2,004.91	14.69	-1.65	0.251
90.00	-72.31	-10.86	0.00	-772.50	0.00	772.50	2,795.82	1,397.91	3,922.90	1,964.36	15.40	-1.69	0.245
93.00	-70.32	-10.76	0.00	-739.92	0.00	739.92	2,304.06	1,152.03	3,254.27	1,629.55	16.48	-1.76	0.267
95.00	-69.32	-10.71	0.00	-718.41	0.00	718.41	2,286.90	1,143.45	3,196.90	1,600.83	17.23	-1.80	0.262
100.00	-66.86	-10.56	0.00	-664.87	0.00	664.87	2,243.44	1,121.72	3,054.90	1,529.72	19.17	-1.91	0.250
102.50	-65.63	-10.49	0.00	-638.47	0.00	638.47	2,221.40	1,110.70	2,984.67	1,494.55	20.18	-1.96	0.244
102.50	-65.63	-10.49	0.00	-638.47	0.00	638.47	2,221.40	1,110.70	2,984.67	1,494.55	20.18	-1.96	0.457
105.00	-64.60	-10.47	0.00	-612.25	0.00	612.25	2,198.14	1,099.07	2,913.61	1,458.97	21.22	-2.01	0.449
110.00	-62.56	-10.42	0.00	-559.89	0.00	559.89	2,138.65	1,069.33	2,757.31	1,380.70	23.43	-2.21	0.435
115.00	-60.64	-10.40	0.00	-507.78	0.00	507.78	2,079.16	1,039.58	2,605.31	1,304.59	25.85	-2.40	0.418
116.50	-60.06	-10.42	0.00	-492.18	0.00	492.18	2,061.32	1,030.66	2,560.55	1,282.18	26.61	-2.46	0.413
120.00	-58.40	-10.38	0.00	-455.72	0.00	455.72	2,019.67	1,009.84	2,457.62	1,230.64	28.47	-2.60	0.399
121.00	-57.92	-10.40	0.00	-445.34	0.00	445.34	1,570.79	785.40	1,940.61	971.75	29.02	-2.64	0.495
125.00	-56.51	-10.38	0.00	-403.75	0.00	403.75	1,545.06	772.53	1,864.04	933.41	31.29	-2.79	0.469
127.00	-48.72	-9.12	0.00	-383.00	0.00	383.00	1,531.99	766.00	1,826.09	914.40	32.48	-2.88	0.451
130.00	-47.71	-9.11	0.00	-355.65	0.00	355.65	1,512.16	756.08	1,769.59	886.11	34.33	-3.00	0.433
135.00	-46.07	-9.07	0.00	-310.10	0.00	310.10	1,478.46	739.23	1,676.61	839.55	37.58	-3.21	0.401
140.00	-44.44	-9.01	0.00	-264.75	0.00	264.75	1,443.96	721.98	1,585.19	793.77	41.05	-3.40	0.364
145.00	-42.37	-8.86	0.00	-219.71	0.00	219.71	1,408.39	704.19	1,495.13	748.68	44.71	-3.58	0.324
146.00	-41.19	-8.67	0.00	-210.85	0.00	210.85	1,398.87	699.44	1,474.90	738.54	45.46	-3.62	0.315
149.00	-40.43	-8.62	0.00	-184.85	0.00	184.85	1,370.32	685.16	1,415.01	708.56	47.76	-3.72	0.291
150.00	-40.11	-8.60	0.00	-176.24	0.00	176.24	1,360.80	680.40	1,395.33	698.70	48.54	-3.75	0.282
152.50	-39.33	-8.54	0.00	-154.74	0.00	154.74	947.27	473.64	973.73	487.59	50.53	-3.82	0.359
155.00	-38.75	-8.50	0.00	-133.38	0.00	133.38	936.35	468.18	945.55	473.48	52.55	-3.89	0.323
160.00	-37.61	-8.40	0.00	-90.88	0.00	90.88	913.91	456.96	889.79	445.55	56.70	-4.04	0.245

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:46 AM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

29 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

165.00	-36.51	-8.28	0.00	-48.90	0.00	48.90	890.67	445.33	834.90	418.07	60.98	-4.13	0.158
167.00	-12.21	-2.26	0.00	-32.34	0.00	32.34	881.14	440.57	813.20	407.21	62.72	-4.16	0.093
170.00	-11.63	-2.18	0.00	-25.55	0.00	25.55	866.62	433.31	780.97	391.06	65.34	-4.19	0.079
171.00	-10.99	-1.99	0.00	-23.37	0.00	23.37	861.71	430.86	770.30	385.72	66.22	-4.20	0.073
175.00	-10.34	-1.86	0.00	-15.42	0.00	15.42	841.76	420.88	728.08	364.58	69.74	-4.23	0.055
180.00	-9.55	-1.72	0.00	-6.14	0.00	6.14	816.11	408.05	676.33	338.67	74.18	-4.25	0.030
183.00	0.00	-1.01	0.00	-0.96	0.00	0.96	800.33	400.16	645.87	323.41	76.85	-4.25	0.003

Load Case: 1.0D + 1.0W	Serviceability 60 mph	26 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		44.7	0.0					0.0	0.0	44.7	0.0	0.0	0.0
5.00		77.2	1,287.4					0.0	334.0	77.2	1,621.4	0.0	0.0
7.00	Appurtenance(s)	81.0	508.4	17.3	0.0	0.0	75.6	13.5	278.6	111.7	862.6	0.0	0.0
10.00		127.9	755.5					20.2	418.0	148.0	1,173.4	0.0	0.0
15.00		157.4	1,240.2					33.6	696.6	191.1	1,936.8	0.0	0.0
20.00		116.4	1,216.6					33.6	696.6	150.0	1,913.2	0.0	0.0
22.50	Reinf. Top Reinf	76.5	599.4					16.8	348.3	93.3	947.7	0.0	0.0
25.00		90.7	593.5					16.8	348.3	107.5	941.8	0.0	0.0
28.50	Bot - Section 2	75.5	821.0					23.5	487.6	99.0	1,308.7	0.0	0.0
30.00		99.8	704.8					10.1	209.0	109.9	913.7	0.0	0.0
35.00	Top - Section 1	155.6	2,318.5					34.4	696.6	190.1	3,015.1	0.0	0.0
40.00		126.4	1,149.1					35.9	696.6	162.3	1,845.7	0.0	0.0
43.00	Reinf. Top Reinf	79.8	678.1					22.2	418.0	102.0	1,096.1	0.0	0.0
45.00		112.7	447.4					15.0	278.6	127.8	726.0	0.0	0.0
50.00		162.0	1,101.9					38.4	696.6	200.3	1,798.5	0.0	0.0
55.00		130.2	1,078.3					39.5	696.6	169.7	1,774.9	0.0	0.0
58.00	Bot - Section 3	82.2	635.6					24.2	418.0	106.4	1,053.6	0.0	0.0
60.00		91.6	740.4					16.3	278.6	107.9	1,019.0	0.0	0.0
63.50	Top - Section 2	83.3	1,279.8					29.0	487.6	112.3	1,767.4	0.0	0.0
65.00		108.3	235.4					12.6	209.0	120.8	444.4	0.0	0.0
70.00		166.3	773.3					42.4	696.6	208.8	1,469.9	0.0	0.0
75.00		165.8	755.6					43.3	696.6	209.1	1,452.2	0.0	0.0
80.00		164.9	737.9					44.2	696.6	209.0	1,434.5	0.0	0.0
85.00		131.2	720.2					45.0	696.6	176.1	1,416.8	0.0	0.0
88.00	Bot - Section 4	82.1	423.6					27.3	418.0	109.5	841.6	0.0	0.0
90.00		82.6	515.9					18.4	278.6	100.9	794.5	0.0	0.0
93.00	Top - Section 3	82.3	764.1					27.8	418.0	110.0	1,182.0	0.0	0.0
95.00		114.2	231.1					18.7	278.6	132.9	509.8	0.0	0.0
100.00		121.8	567.5					47.1	696.6	168.9	1,264.1	0.0	0.0
102.50	Reinf. Top	80.5	278.2					23.8	348.3	104.3	626.5	0.0	0.0
105.00		119.5	274.5					24.0	181.3	143.5	455.8	0.0	0.0
110.00		121.8	538.0					48.5	362.6	170.3	900.6	0.0	0.0
115.00		55.0	523.2					0.0	362.6	55.0	885.8	0.0	0.0
116.50	Bot - Section 5	42.2	154.1					0.0	108.8	42.2	262.9	0.0	0.0
120.00		38.0	643.2					0.0	253.8	38.0	897.0	0.0	0.0
121.00	Top - Section 4	41.7	181.4					0.0	72.5	41.7	253.9	0.0	0.0
125.00		49.8	321.1					0.0	290.1	49.8	611.2	0.0	0.0
127.00	Appurtenance(s)	40.9	157.7	973.7	0.0	0.0	2,862.6	0.0	145.0	1,014.6	3,165.3	0.0	0.0
130.00		64.6	233.0					0.0	181.3	64.6	414.3	0.0	0.0
135.00		79.5	378.9					0.0	302.1	79.5	681.0	0.0	0.0
140.00		77.8	367.1					0.0	302.1	77.8	669.2	0.0	0.0
145.00	Appurtenance(s)	46.1	355.3	24.8	0.0	0.0	200.0	0.0	302.1	70.9	857.4	0.0	0.0
146.00	Appurtenance(s)	30.1	69.6	150.1	0.0	0.0	198.6	0.0	60.4	180.2	328.7	0.0	0.0
149.00	Bot - Section 6	30.1	206.1					0.0	137.0	30.1	343.1	0.0	0.0
150.00		26.3	119.5					0.0	45.7	26.3	165.1	0.0	0.0
152.50	Top - Section 5	37.2	295.0					0.0	114.1	37.2	409.2	0.0	0.0
155.00		54.7	125.5					0.0	114.1	54.7	239.6	0.0	0.0
160.00		71.5	244.3					0.0	228.3	71.5	472.6	0.0	0.0

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

165.00		49.1	235.5					0.0	228.3	49.1	463.8	0.0	0.0
167.00	Appurtenance(s)	34.2	91.7	1,220.4	0.0	0.0	4,194.7	0.0	91.3	1,254.6	4,377.7	0.0	0.0
170.00		27.1	134.9					0.0	81.4	27.1	216.3	0.0	0.0
171.00	Appurtenance(s)	33.2	44.3	117.0	0.0	0.0	79.2	0.0	27.1	150.2	150.6	0.0	0.0
175.00		58.6	173.5					0.0	88.9	58.6	262.4	0.0	0.0
180.00		50.8	208.9					0.0	111.1	50.8	320.0	0.0	0.0
183.00	Appurtenance(s)	18.7	121.1	1,085.3	0.0	1,211.5	3,654.5	0.0	66.7	1,104.1	3,842.3	0.0	0.0
Totals:									9,003.89	58,797.8		0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-58.79	-8.98	0.00	-1,036.35	0.00	1,036.35	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.190
5.00	-57.17	-8.94	0.00	-991.44	0.00	991.44	4,284.85	2,142.42	8,295.82	4,154.08	0.03	-0.05	0.187
7.00	-56.30	-8.85	0.00	-973.56	0.00	973.56	4,253.12	2,126.56	8,172.78	4,092.46	0.05	-0.07	0.186
10.00	-55.12	-8.74	0.00	-947.01	0.00	947.01	4,205.53	2,102.76	7,989.95	4,000.91	0.10	-0.10	0.185
15.00	-53.18	-8.59	0.00	-903.32	0.00	903.32	4,126.21	2,063.10	7,689.82	3,850.62	0.23	-0.15	0.182
20.00	-51.26	-8.46	0.00	-860.38	0.00	860.38	4,046.89	2,023.44	7,395.44	3,703.21	0.41	-0.19	0.179
22.50	-50.31	-8.39	0.00	-839.22	0.00	839.22	4,007.23	2,003.61	7,250.40	3,630.59	0.52	-0.22	0.177
22.50	-50.31	-8.39	0.00	-839.22	0.00	839.22	4,007.23	2,003.61	7,250.40	3,630.59	0.52	-0.22	0.177
25.00	-49.36	-8.30	0.00	-818.25	0.00	818.25	3,967.57	1,983.78	7,106.80	3,558.68	0.64	-0.24	0.176
28.50	-48.05	-8.22	0.00	-789.19	0.00	789.19	3,912.04	1,956.02	6,908.17	3,459.22	0.83	-0.28	0.173
30.00	-47.13	-8.13	0.00	-776.86	0.00	776.86	3,888.25	1,944.12	6,823.91	3,417.03	0.92	-0.29	0.170
35.00	-44.11	-7.96	0.00	-736.20	0.00	736.20	3,899.62	1,949.81	6,864.12	3,437.16	1.25	-0.34	0.162
40.00	-42.26	-7.82	0.00	-696.40	0.00	696.40	3,820.30	1,910.15	6,586.15	3,297.97	1.63	-0.39	0.159
43.00	-41.17	-7.72	0.00	-672.95	0.00	672.95	3,772.71	1,886.36	6,422.13	3,215.84	1.89	-0.42	0.157
43.00	-41.17	-7.72	0.00	-672.95	0.00	672.95	3,772.71	1,886.36	6,422.13	3,215.84	1.89	-0.42	0.157
45.00	-40.44	-7.61	0.00	-657.51	0.00	657.51	3,740.98	1,870.49	6,313.93	3,161.66	2.07	-0.44	0.155
50.00	-38.63	-7.43	0.00	-619.45	0.00	619.45	3,661.66	1,830.83	6,047.45	3,028.22	2.55	-0.48	0.151
55.00	-36.86	-7.27	0.00	-582.31	0.00	582.31	3,582.34	1,791.17	5,786.72	2,897.66	3.07	-0.53	0.147
58.00	-35.80	-7.16	0.00	-560.51	0.00	560.51	3,534.75	1,767.38	5,633.04	2,820.71	3.41	-0.55	0.145
60.00	-34.78	-7.06	0.00	-546.19	0.00	546.19	3,503.02	1,751.51	5,531.73	2,769.98	3.65	-0.57	0.142
63.50	-33.01	-6.94	0.00	-521.47	0.00	521.47	3,173.44	1,586.72	5,061.87	2,534.70	4.08	-0.60	0.136
65.00	-32.56	-6.84	0.00	-511.06	0.00	511.06	3,152.76	1,576.38	4,994.62	2,501.02	4.27	-0.62	0.135
70.00	-31.09	-6.64	0.00	-476.88	0.00	476.88	3,081.37	1,540.68	4,769.94	2,388.51	4.95	-0.67	0.130
75.00	-29.63	-6.44	0.00	-443.69	0.00	443.69	3,009.98	1,504.99	4,550.42	2,278.59	5.67	-0.72	0.126
80.00	-28.20	-6.23	0.00	-411.50	0.00	411.50	2,938.59	1,469.30	4,336.07	2,171.26	6.45	-0.77	0.121
85.00	-26.78	-6.06	0.00	-380.33	0.00	380.33	2,867.21	1,433.60	4,126.90	2,066.52	7.28	-0.81	0.116
88.00	-25.94	-5.95	0.00	-362.17	0.00	362.17	2,824.37	1,412.19	4,003.88	2,004.91	7.80	-0.84	0.113
90.00	-25.14	-5.84	0.00	-350.28	0.00	350.28	2,795.82	1,397.91	3,922.90	1,964.36	8.16	-0.86	0.109
93.00	-23.96	-5.72	0.00	-332.75	0.00	332.75	2,304.06	1,152.03	3,254.27	1,629.55	8.71	-0.89	0.118
95.00	-23.45	-5.60	0.00	-321.30	0.00	321.30	2,286.90	1,143.45	3,196.90	1,600.83	9.09	-0.91	0.115
100.00	-22.18	-5.42	0.00	-293.31	0.00	293.31	2,243.44	1,121.72	3,054.90	1,529.72	10.07	-0.96	0.108
102.50	-21.56	-5.32	0.00	-279.76	0.00	279.76	2,221.40	1,110.70	2,984.67	1,494.55	10.57	-0.98	0.105
102.50	-21.56	-5.32	0.00	-279.76	0.00	279.76	2,221.40	1,110.70	2,984.67	1,494.55	10.57	-0.98	0.197
105.00	-21.10	-5.18	0.00	-266.47	0.00	266.47	2,198.14	1,099.07	2,913.61	1,458.97	11.09	-1.00	0.192
110.00	-20.19	-5.03	0.00	-240.55	0.00	240.55	2,138.65	1,069.33	2,757.31	1,380.70	12.19	-1.09	0.184
115.00	-19.30	-4.97	0.00	-215.41	0.00	215.41	2,079.16	1,039.58	2,605.31	1,304.59	13.38	-1.17	0.174
116.50	-19.04	-4.94	0.00	-207.96	0.00	207.96	2,061.32	1,030.66	2,560.55	1,282.18	13.75	-1.20	0.171
120.00	-18.14	-4.89	0.00	-190.67	0.00	190.67	2,019.67	1,009.84	2,457.62	1,230.64	14.65	-1.25	0.164
121.00	-17.88	-4.86	0.00	-185.78	0.00	185.78	1,570.79	785.40	1,940.61	971.75	14.91	-1.27	0.203
125.00	-17.27	-4.81	0.00	-166.34	0.00	166.34	1,545.06	772.53	1,864.04	933.41	16.01	-1.33	0.189
127.00	-14.13	-3.73	0.00	-156.72	0.00	156.72	1,531.99	766.00	1,826.09	914.40	16.57	-1.37	0.181
130.00	-13.71	-3.67	0.00	-145.53	0.00	145.53	1,512.16	756.08	1,769.59	886.11	17.45	-1.42	0.173
135.00	-13.03	-3.60	0.00	-127.16	0.00	127.16	1,478.46	739.23	1,676.61	839.55	18.98	-1.51	0.160
140.00	-12.35	-3.52	0.00	-109.19	0.00	109.19	1,443.96	721.98	1,585.19	793.77	20.60	-1.59	0.146
145.00	-11.50	-3.43	0.00	-91.61	0.00	91.61	1,408.39	704.19	1,495.13	748.68	22.31	-1.66	0.131
146.00	-11.17	-3.25	0.00	-88.18	0.00	88.18	1,398.87	699.44	1,474.90	738.54	22.65	-1.67	0.127
149.00	-10.83	-3.21	0.00	-78.44	0.00	78.44	1,370.32	685.16	1,415.01	708.56	23.72	-1.72	0.119
150.00	-10.66	-3.18	0.00	-75.23	0.00	75.23	1,360.80	680.40	1,395.33	698.70	24.08	-1.73	0.116
152.50	-10.25	-3.14	0.00	-67.27	0.00	67.27	947.27	473.64	973.73	487.59	25.00	-1.76	0.149
155.00	-10.01	-3.09	0.00	-59.42	0.00	59.42	936.35	468.18	945.55	473.48	25.93	-1.79	0.136
160.00	-9.54	-3.01	0.00	-43.99	0.00	43.99	913.91	456.96	889.79	445.55	27.84	-1.86	0.109

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

165.00	-9.08	-2.95	0.00	-28.94	0.00	28.94	890.67	445.33	834.90	418.07	29.82	-1.91	0.079
167.00	-4.74	-1.55	0.00	-23.04	0.00	23.04	881.14	440.57	813.20	407.21	30.62	-1.93	0.062
170.00	-4.53	-1.52	0.00	-18.39	0.00	18.39	866.62	433.31	780.97	391.06	31.84	-1.95	0.052
171.00	-4.38	-1.36	0.00	-16.87	0.00	16.87	861.71	430.86	770.30	385.72	32.25	-1.95	0.049
175.00	-4.12	-1.30	0.00	-11.41	0.00	11.41	841.76	420.88	728.08	364.58	33.89	-1.97	0.036
180.00	-3.80	-1.24	0.00	-4.92	0.00	4.92	816.11	408.05	676.33	338.67	35.97	-1.99	0.019
183.00	0.00	-1.10	0.00	-1.21	0.00	1.21	800.33	400.16	645.87	323.41	37.22	-2.00	0.004

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
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):	3.13
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	58.80 k
Seismic Base Shear (E):	2.29 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)
54	181.50	188	6,185	0.010	23	233
53	177.50	320	10,083	0.017	38	397
52	173.00	262	7,853	0.013	30	326
51	170.50	71	2,076	0.003	8	89
50	168.50	216	6,142	0.010	23	268
49	166.00	183	5,044	0.008	19	227
48	162.50	464	12,247	0.020	46	575
47	157.50	473	11,725	0.019	44	586
46	153.75	240	5,665	0.009	21	297
45	151.25	409	9,361	0.015	35	508
44	149.50	165	3,690	0.006	14	205
43	147.50	343	7,464	0.012	28	426
42	145.50	130	2,754	0.005	10	161
41	142.50	657	13,349	0.022	50	816
40	137.50	669	12,652	0.021	48	830
39	132.50	681	11,956	0.020	45	845
38	128.50	414	6,841	0.011	26	514
37	126.00	303	4,806	0.008	18	376
36	123.00	611	9,246	0.015	35	758
35	120.50	254	3,687	0.006	14	315
34	118.25	897	12,542	0.021	47	1,113
33	115.75	263	3,522	0.006	13	326
32	112.50	886	11,211	0.018	42	1,099

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

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Customer: AT&T MOBILITY

31	107.50	901	10,407	0.017	39	1,117
30	103.75	456	4,906	0.008	19	566
29	101.25	627	6,423	0.011	24	777
28	97.50	1,264	12,017	0.020	45	1,568
27	94.00	510	4,504	0.007	17	632
26	91.50	1,182	9,896	0.016	37	1,467
25	89.00	795	6,293	0.010	24	986
24	86.50	842	6,297	0.010	24	1,044
23	82.50	1,417	9,643	0.016	36	1,758
22	77.50	1,434	8,616	0.014	33	1,780
21	72.50	1,452	7,633	0.013	29	1,802
20	67.50	1,470	6,697	0.011	25	1,824
19	64.25	444	1,835	0.003	7	551
18	61.75	1,767	6,739	0.011	25	2,193
17	59.00	1,019	3,547	0.006	13	1,264
16	56.50	1,054	3,363	0.006	13	1,307
15	52.50	1,775	4,892	0.008	18	2,202
14	47.50	1,799	4,058	0.007	15	2,231
13	44.00	726	1,406	0.002	5	901
12	41.50	1,096	1,888	0.003	7	1,360
11	37.50	1,846	2,596	0.004	10	2,290
10	32.50	3,015	3,185	0.005	12	3,741
9	29.25	914	782	0.001	3	1,134
8	26.75	1,309	936	0.002	4	1,624
7	23.75	942	531	0.001	2	1,169
6	21.25	948	428	0.001	2	1,176
5	17.50	1,913	586	0.001	2	2,374
4	12.50	1,937	303	0.000	1	2,403
3	8.50	1,173	85	0.000	0	1,456
2	6.00	787	28	0.000	0	976
1	2.50	1,621	10	0.000	0	2,012
DragonWave Horizon C	183.00	21	710	0.001	3	26
Alcatel-Lucent RRH2x	183.00	317	10,629	0.018	40	394
Alcatel-Lucent 1900	183.00	180	6,028	0.010	23	223
Decibel DB844H90E-XY	183.00	42	1,407	0.002	5	52
Nokia 2.5G MAA - AAH	183.00	311	10,408	0.017	39	386
DragonWave A-ANT-18G	183.00	54	1,815	0.003	7	67
Andrew 844G65VTZASX	183.00	48	1,607	0.003	6	60
Commscope NNVV-65B-R	183.00	232	7,776	0.013	29	288
Site Pro 1 RMQP-496-	183.00	2,449	82,005	0.135	310	3,038
RFS APXV18-206517S-C	171.00	79	2,316	0.004	9	98
CCI TPX-070821	167.00	45	1,255	0.002	5	56
Kaelus DBCT108F1V92-	167.00	83	2,326	0.004	9	103
Commscope WCS-IMFQ-A	167.00	30	823	0.001	3	37
Powerwave Allgon LGP	167.00	85	2,359	0.004	9	105
Raycap DC6-48-60-18-	167.00	40	1,116	0.002	4	50
Raycap DC6-48-60-18-	167.00	32	887	0.001	3	39
Ericsson RRUS 4426 B	167.00	145	4,049	0.007	15	180
Ericsson RRUS 4478 B	167.00	180	5,012	0.008	19	223
Ericsson RRUS 4478 B	167.00	180	5,012	0.008	19	223
Ericsson RRUS 11 (Ba	167.00	132	3,681	0.006	14	164
Ericsson RRUS 32 B2	167.00	159	4,434	0.007	17	197
Ericsson RRUS-32 (77	167.00	231	6,442	0.011	24	287
Powerwave Allgon 777	167.00	105	2,928	0.005	11	130
CCI OPA-65R-LCUU-H4	167.00	171	4,769	0.008	18	212
Quintel QS66512-2	167.00	333	9,287	0.015	35	413
Kathrein Scala 80010	167.00	245	6,827	0.011	26	304
Flat Platform w/ Han	167.00	2,000	55,778	0.092	211	2,481
Kathrein Scala Smart	146.00	10	211	0.000	1	12
Andrew ETW200VS12UB	146.00	33	703	0.001	3	41
Andrew ETW190VS12UB	146.00	33	703	0.001	3	41
Andrew SBNHH-1D65A	146.00	123	2,615	0.004	10	152
Flush Mounts	145.00	200	4,205	0.007	16	248
RFS FD9R6004/1C-3L	127.00	19	300	0.000	1	23

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

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Customer: AT&T MOBILITY

Alcatel-Lucent RRH2X	127.00	138	2,226	0.004	8	171
Alcatel-Lucent RRH2X	127.00	132	2,129	0.004	8	164
Alcatel-Lucent RRH2x	127.00	132	2,129	0.004	8	164
RFS DB-T1-6Z-8AB-0Z	127.00	44	710	0.001	3	55
RFS DB-T1-6Z-8AB-0Z	127.00	44	710	0.001	3	55
Andrew HBXX-6516DS-A	127.00	92	1,481	0.002	6	114
Andrew LNX-4514DS-A1	127.00	89	1,427	0.002	5	110
Antel BXA-80063/6CF	127.00	45	721	0.001	3	55
Andrew HBXX-6517DS-A	127.00	129	2,081	0.003	8	160
Flat Platform w/ Han	127.00	2,000	32,258	0.053	122	2,481
Thales PCS VP/360/2	7.00	1	0	0.000	0	1
Stand-Off	7.00	75	4	0.000	0	93
		58,798	606,932	1.000	2,293	72,953

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

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)
54	181.50	188	6,185	0.010	23	161
53	177.50	320	10,083	0.017	38	275
52	173.00	262	7,853	0.013	30	225
51	170.50	71	2,076	0.003	8	61
50	168.50	216	6,142	0.010	23	186
49	166.00	183	5,044	0.008	19	157
48	162.50	464	12,247	0.020	46	399
47	157.50	473	11,725	0.019	44	406
46	153.75	240	5,665	0.009	21	206
45	151.25	409	9,361	0.015	35	352
44	149.50	165	3,690	0.006	14	142
43	147.50	343	7,464	0.012	28	295
42	145.50	130	2,754	0.005	10	112
41	142.50	657	13,349	0.022	50	565
40	137.50	669	12,652	0.021	48	575
39	132.50	681	11,956	0.020	45	585
38	128.50	414	6,841	0.011	26	356
37	126.00	303	4,806	0.008	18	260
36	123.00	611	9,246	0.015	35	525
35	120.50	254	3,687	0.006	14	218
34	118.25	897	12,542	0.021	47	771
33	115.75	263	3,522	0.006	13	226
32	112.50	886	11,211	0.018	42	761
31	107.50	901	10,407	0.017	39	774
30	103.75	456	4,906	0.008	19	392
29	101.25	627	6,423	0.011	24	538
28	97.50	1,264	12,017	0.020	45	1,086
27	94.00	510	4,504	0.007	17	438
26	91.50	1,182	9,896	0.016	37	1,016
25	89.00	795	6,293	0.010	24	683
24	86.50	842	6,297	0.010	24	723
23	82.50	1,417	9,643	0.016	36	1,217
22	77.50	1,434	8,616	0.014	33	1,233
21	72.50	1,452	7,633	0.013	29	1,248
20	67.50	1,470	6,697	0.011	25	1,263
19	64.25	444	1,835	0.003	7	382
18	61.75	1,767	6,739	0.011	25	1,519
17	59.00	1,019	3,547	0.006	13	876
16	56.50	1,054	3,363	0.006	13	905
15	52.50	1,775	4,892	0.008	18	1,525
14	47.50	1,799	4,058	0.007	15	1,545
13	44.00	726	1,406	0.002	5	624

Site Number: 302535

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Site Name: Milford CT 2, CT

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Customer: AT&T MOBILITY

12	41.50	1,096	1,888	0.003	7	942
11	37.50	1,846	2,596	0.004	10	1,586
10	32.50	3,015	3,185	0.005	12	2,591
9	29.25	914	782	0.001	3	785
8	26.75	1,309	936	0.002	4	1,124
7	23.75	942	531	0.001	2	809
6	21.25	948	428	0.001	2	814
5	17.50	1,913	586	0.001	2	1,644
4	12.50	1,937	303	0.000	1	1,664
3	8.50	1,173	85	0.000	0	1,008
2	6.00	787	28	0.000	0	676
1	2.50	1,621	10	0.000	0	1,393
DragonWave Horizon C	183.00	21	710	0.001	3	18
Alcatel-Lucent RRH2x	183.00	317	10,629	0.018	40	273
Alcatel-Lucent 1900	183.00	180	6,028	0.010	23	155
Decibel DB844H90E-XY	183.00	42	1,407	0.002	5	36
Nokia 2.5G MAA - AAH	183.00	311	10,408	0.017	39	267
DragonWave A-ANT-18G	183.00	54	1,815	0.003	7	47
Andrew 844G65VTZASX	183.00	48	1,607	0.003	6	41
Commscope NNVV-65B-R	183.00	232	7,776	0.013	29	200
Site Pro 1 RMQP-496-	183.00	2,449	82,005	0.135	310	2,104
RFS APXV18-206517S-C	171.00	79	2,316	0.004	9	68
CCI TPX-070821	167.00	45	1,255	0.002	5	39
Kaelus DBCT108F1V92-	167.00	83	2,326	0.004	9	72
Commscope WCS-IMFQ-A	167.00	30	823	0.001	3	25
Powerwave Allgon LGP	167.00	85	2,359	0.004	9	73
Raycap DC6-48-60-18-	167.00	40	1,116	0.002	4	34
Raycap DC6-48-60-18-	167.00	32	887	0.001	3	27
Ericsson RRUS 4426 B	167.00	145	4,049	0.007	15	125
Ericsson RRUS 4478 B	167.00	180	5,012	0.008	19	154
Ericsson RRUS 4478 B	167.00	180	5,012	0.008	19	154
Ericsson RRUS 11 (Ba	167.00	132	3,681	0.006	14	113
Ericsson RRUS 32 B2	167.00	159	4,434	0.007	17	137
Ericsson RRUS-32 (77	167.00	231	6,442	0.011	24	198
Powerwave Allgon 777	167.00	105	2,928	0.005	11	90
CCI OPA-65R-LCUU-H4	167.00	171	4,769	0.008	18	147
Quintel QS66512-2	167.00	333	9,287	0.015	35	286
Kathrein Scala 80010	167.00	245	6,827	0.011	26	210
Flat Platform w/ Han	167.00	2,000	55,778	0.092	211	1,719
Kathrein Scala Smart	146.00	10	211	0.000	1	9
Andrew ETW200VS12UB	146.00	33	703	0.001	3	28
Andrew ETW190VS12UB	146.00	33	703	0.001	3	28
Andrew SBNHH-1D65A	146.00	123	2,615	0.004	10	105
Flush Mounts	145.00	200	4,205	0.007	16	172
RFS FD9R6004/1C-3L	127.00	19	300	0.000	1	16
Alcatel-Lucent RRH2X	127.00	138	2,226	0.004	8	119
Alcatel-Lucent RRH2X	127.00	132	2,129	0.004	8	113
Alcatel-Lucent RRH2x	127.00	132	2,129	0.004	8	113
RFS DB-T1-6Z-8AB-OZ	127.00	44	710	0.001	3	38
RFS DB-T1-6Z-8AB-OZ	127.00	44	710	0.001	3	38
Andrew HBXX-6516DS-A	127.00	92	1,481	0.002	6	79
Andrew LNX-4514DS-A1	127.00	89	1,427	0.002	5	76
Antel BXA-80063/6CF	127.00	45	721	0.001	3	38
Andrew HBXX-6517DS-A	127.00	129	2,081	0.003	8	111
Flat Platform w/ Han	127.00	2,000	32,258	0.053	122	1,719
Thales PCS VP/360/2	7.00	1	0	0.000	0	1
Stand-Off	7.00	75	4	0.000	0	64
		58,798	606,932	1.000	2,293	50,522

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Customer: AT&T MOBILITY

Load Case (1.2 + 0.2Sds) * DL + E ELM 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	-70.94	-2.30	0.00	-345.38	0.00	345.38	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.073
5.00	-69.96	-2.32	0.00	-333.86	0.00	333.86	4,284.85	2,142.42	8,295.82	4,154.08	0.01	-0.02	0.072
7.00	-68.41	-2.33	0.00	-329.23	0.00	329.23	4,253.12	2,126.56	8,172.78	4,092.46	0.02	-0.02	0.072
10.00	-66.01	-2.34	0.00	-322.26	0.00	322.26	4,205.53	2,102.76	7,989.95	4,000.91	0.03	-0.03	0.072
15.00	-63.64	-2.35	0.00	-310.57	0.00	310.57	4,126.21	2,063.10	7,689.82	3,850.62	0.08	-0.05	0.071
20.00	-62.46	-2.36	0.00	-298.80	0.00	298.80	4,046.89	2,023.44	7,395.44	3,703.21	0.14	-0.07	0.071
22.50	-61.29	-2.37	0.00	-292.89	0.00	292.89	4,007.23	2,003.61	7,250.40	3,630.59	0.17	-0.07	0.070
22.50	-61.29	-2.37	0.00	-292.89	0.00	292.89	4,007.23	2,003.61	7,250.40	3,630.59	0.17	-0.07	0.070
25.00	-59.67	-2.37	0.00	-286.97	0.00	286.97	3,967.57	1,983.78	7,106.80	3,558.68	0.22	-0.08	0.070
28.50	-58.53	-2.38	0.00	-278.66	0.00	278.66	3,912.04	1,956.02	6,908.17	3,459.22	0.28	-0.10	0.069
30.00	-54.79	-2.37	0.00	-275.09	0.00	275.09	3,888.25	1,944.12	6,823.91	3,417.03	0.31	-0.10	0.068
35.00	-52.50	-2.37	0.00	-263.23	0.00	263.23	3,899.62	1,949.81	6,864.12	3,437.16	0.43	-0.12	0.065
40.00	-51.14	-2.37	0.00	-251.37	0.00	251.37	3,820.30	1,910.15	6,586.15	3,297.97	0.56	-0.14	0.065
43.00	-50.24	-2.37	0.00	-244.25	0.00	244.25	3,772.71	1,886.36	6,422.13	3,215.84	0.65	-0.15	0.064
43.00	-50.24	-2.37	0.00	-244.25	0.00	244.25	3,772.71	1,886.36	6,422.13	3,215.84	0.65	-0.15	0.064
45.00	-48.01	-2.36	0.00	-239.50	0.00	239.50	3,740.98	1,870.49	6,313.93	3,161.66	0.71	-0.15	0.063
50.00	-45.80	-2.35	0.00	-227.68	0.00	227.68	3,661.66	1,830.83	6,047.45	3,028.22	0.88	-0.17	0.062
55.00	-44.50	-2.35	0.00	-215.92	0.00	215.92	3,582.34	1,791.17	5,786.72	2,897.66	1.06	-0.19	0.061
58.00	-43.23	-2.33	0.00	-208.89	0.00	208.89	3,534.75	1,767.38	5,633.04	2,820.71	1.18	-0.20	0.060
60.00	-41.04	-2.31	0.00	-204.22	0.00	204.22	3,503.02	1,751.51	5,531.73	2,769.98	1.27	-0.20	0.059
63.50	-40.49	-2.31	0.00	-196.14	0.00	196.14	3,173.44	1,586.72	5,061.87	2,534.70	1.42	-0.21	0.057
65.00	-38.66	-2.28	0.00	-192.68	0.00	192.68	3,152.76	1,576.38	4,994.62	2,501.02	1.49	-0.22	0.057
70.00	-36.86	-2.26	0.00	-181.28	0.00	181.28	3,081.37	1,540.68	4,769.94	2,388.51	1.73	-0.24	0.055
75.00	-35.08	-2.23	0.00	-169.99	0.00	169.99	3,009.98	1,504.99	4,550.42	2,278.59	1.99	-0.26	0.054
80.00	-33.32	-2.20	0.00	-158.84	0.00	158.84	2,938.59	1,469.30	4,336.07	2,171.26	2.27	-0.28	0.052
85.00	-32.28	-2.17	0.00	-147.87	0.00	147.87	2,867.21	1,433.60	4,126.90	2,066.52	2.57	-0.30	0.050
88.00	-31.29	-2.15	0.00	-141.34	0.00	141.34	2,824.37	1,412.19	4,003.88	2,004.91	2.75	-0.31	0.049
90.00	-29.82	-2.11	0.00	-137.04	0.00	137.04	2,795.82	1,397.91	3,922.90	1,964.36	2.88	-0.31	0.048
93.00	-29.19	-2.09	0.00	-130.71	0.00	130.71	2,304.06	1,152.03	3,254.27	1,629.55	3.09	-0.32	0.052
95.00	-27.62	-2.05	0.00	-126.52	0.00	126.52	2,286.90	1,143.45	3,196.90	1,600.83	3.22	-0.33	0.050
100.00	-26.84	-2.02	0.00	-116.29	0.00	116.29	2,243.44	1,121.72	3,054.90	1,529.72	3.58	-0.35	0.048
102.50	-26.28	-2.01	0.00	-111.23	0.00	111.23	2,221.40	1,110.70	2,984.67	1,494.55	3.77	-0.36	0.047
102.50	-26.28	-2.01	0.00	-111.23	0.00	111.23	2,221.40	1,110.70	2,984.67	1,494.55	3.77	-0.36	0.086
105.00	-25.16	-1.97	0.00	-106.22	0.00	106.22	2,198.14	1,099.07	2,913.61	1,458.97	3.96	-0.37	0.084
110.00	-24.06	-1.93	0.00	-96.37	0.00	96.37	2,138.65	1,069.33	2,757.31	1,380.70	4.36	-0.40	0.081
115.00	-23.73	-1.93	0.00	-86.70	0.00	86.70	2,079.16	1,039.58	2,605.31	1,304.59	4.80	-0.44	0.078
116.50	-22.62	-1.88	0.00	-83.81	0.00	83.81	2,061.32	1,030.66	2,560.55	1,282.18	4.94	-0.45	0.076
120.00	-22.31	-1.87	0.00	-77.24	0.00	77.24	2,019.67	1,009.84	2,457.62	1,230.64	5.28	-0.47	0.074
121.00	-21.55	-1.83	0.00	-75.37	0.00	75.37	1,570.79	785.40	1,940.61	971.75	5.38	-0.48	0.091
125.00	-21.17	-1.82	0.00	-68.04	0.00	68.04	1,545.06	772.53	1,864.04	933.41	5.79	-0.50	0.087
127.00	-17.11	-1.59	0.00	-64.41	0.00	64.41	1,531.99	766.00	1,826.09	914.40	6.00	-0.52	0.082
130.00	-16.26	-1.54	0.00	-59.65	0.00	59.65	1,512.16	756.08	1,769.59	886.11	6.34	-0.54	0.078
135.00	-15.43	-1.50	0.00	-51.94	0.00	51.94	1,478.46	739.23	1,676.61	839.55	6.92	-0.57	0.072
140.00	-14.62	-1.44	0.00	-44.46	0.00	44.46	1,443.96	721.98	1,585.19	793.77	7.54	-0.61	0.066
145.00	-14.21	-1.42	0.00	-37.24	0.00	37.24	1,408.39	704.19	1,495.13	748.68	8.19	-0.64	0.060
146.00	-13.53	-1.37	0.00	-35.82	0.00	35.82	1,398.87	699.44	1,474.90	738.54	8.32	-0.64	0.058
149.00	-13.33	-1.36	0.00	-31.72	0.00	31.72	1,370.32	685.16	1,415.01	708.56	8.73	-0.66	0.054
150.00	-12.82	-1.32	0.00	-30.36	0.00	30.36	1,360.80	680.40	1,395.33	698.70	8.87	-0.66	0.053
152.50	-12.52	-1.29	0.00	-27.07	0.00	27.07	947.27	473.64	973.73	487.59	9.22	-0.68	0.069
155.00	-11.94	-1.25	0.00	-23.84	0.00	23.84	936.35	468.18	945.55	473.48	9.58	-0.69	0.063
160.00	-11.36	-1.20	0.00	-17.60	0.00	17.60	913.91	456.96	889.79	445.55	10.31	-0.72	0.052
165.00	-11.14	-1.18	0.00	-11.61	0.00	11.61	890.67	445.33	834.90	418.07	11.07	-0.74	0.040
167.00	-5.67	-0.64	0.00	-9.25	0.00	9.25	881.14	440.57	813.20	407.21	11.38	-0.74	0.029
170.00	-5.58	-0.64	0.00	-7.32	0.00	7.32	866.62	433.31	780.97	391.06	11.85	-0.75	0.025
171.00	-5.16	-0.59	0.00	-6.68	0.00	6.68	861.71	430.86	770.30	385.72	12.01	-0.75	0.023
175.00	-4.76	-0.55	0.00	-4.32	0.00	4.32	841.76	420.88	728.08	364.58	12.65	-0.76	0.017

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

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180.00	-4.53	-0.52	0.00	-1.57	0.00	1.57	816.11	408.05	676.33	338.67	13.45	-0.77	0.010
183.00	0.00	-0.46	0.00	0.00	0.00	0.00	800.33	400.16	645.87	323.41	13.93	-0.77	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	-49.13	-2.30	0.00	-337.42	0.00	337.42	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.067
5.00	-48.45	-2.31	0.00	-325.92	0.00	325.92	4,284.85	2,142.42	8,295.82	4,154.08	0.01	-0.02	0.067
7.00	-47.38	-2.31	0.00	-321.31	0.00	321.31	4,253.12	2,126.56	8,172.78	4,092.46	0.02	-0.02	0.067
10.00	-45.71	-2.32	0.00	-314.37	0.00	314.37	4,205.53	2,102.76	7,989.95	4,000.91	0.03	-0.03	0.066
15.00	-44.07	-2.33	0.00	-302.76	0.00	302.76	4,126.21	2,063.10	7,689.82	3,850.62	0.08	-0.05	0.066
20.00	-43.25	-2.34	0.00	-291.10	0.00	291.10	4,046.89	2,023.44	7,395.44	3,703.21	0.13	-0.06	0.065
22.50	-42.44	-2.34	0.00	-285.26	0.00	285.26	4,007.23	2,003.61	7,250.40	3,630.59	0.17	-0.07	0.065
22.50	-42.44	-2.34	0.00	-285.26	0.00	285.26	4,007.23	2,003.61	7,250.40	3,630.59	0.17	-0.07	0.065
25.00	-41.32	-2.34	0.00	-279.40	0.00	279.40	3,967.57	1,983.78	7,106.80	3,558.68	0.21	-0.08	0.065
28.50	-40.53	-2.35	0.00	-271.20	0.00	271.20	3,912.04	1,956.02	6,908.17	3,459.22	0.27	-0.09	0.064
30.00	-37.94	-2.34	0.00	-267.68	0.00	267.68	3,888.25	1,944.12	6,823.91	3,417.03	0.30	-0.10	0.063
35.00	-36.36	-2.33	0.00	-256.00	0.00	256.00	3,899.62	1,949.81	6,864.12	3,437.16	0.42	-0.11	0.061
40.00	-35.41	-2.33	0.00	-244.33	0.00	244.33	3,820.30	1,910.15	6,586.15	3,297.97	0.55	-0.13	0.060
43.00	-34.79	-2.33	0.00	-237.33	0.00	237.33	3,772.71	1,886.36	6,422.13	3,215.84	0.63	-0.14	0.059
43.00	-34.79	-2.33	0.00	-237.33	0.00	237.33	3,772.71	1,886.36	6,422.13	3,215.84	0.63	-0.14	0.059
45.00	-33.24	-2.32	0.00	-232.67	0.00	232.67	3,740.98	1,870.49	6,313.93	3,161.66	0.69	-0.15	0.059
50.00	-31.72	-2.31	0.00	-221.08	0.00	221.08	3,661.66	1,830.83	6,047.45	3,028.22	0.86	-0.16	0.058
55.00	-30.81	-2.30	0.00	-209.55	0.00	209.55	3,582.34	1,791.17	5,786.72	2,897.66	1.04	-0.18	0.057
58.00	-29.94	-2.28	0.00	-202.66	0.00	202.66	3,534.75	1,767.38	5,633.04	2,820.71	1.15	-0.19	0.056
60.00	-28.42	-2.26	0.00	-198.09	0.00	198.09	3,503.02	1,751.51	5,531.73	2,769.98	1.23	-0.20	0.055
63.50	-28.04	-2.25	0.00	-190.19	0.00	190.19	3,173.44	1,586.72	5,061.87	2,534.70	1.38	-0.21	0.053
65.00	-26.77	-2.23	0.00	-186.81	0.00	186.81	3,152.76	1,576.38	4,994.62	2,501.02	1.45	-0.21	0.053
70.00	-25.52	-2.20	0.00	-175.66	0.00	175.66	3,081.37	1,540.68	4,769.94	2,388.51	1.68	-0.23	0.051
75.00	-24.29	-2.17	0.00	-164.63	0.00	164.63	3,009.98	1,504.99	4,550.42	2,278.59	1.93	-0.25	0.050
80.00	-23.07	-2.14	0.00	-153.76	0.00	153.76	2,938.59	1,469.30	4,336.07	2,171.26	2.21	-0.27	0.048
85.00	-22.35	-2.12	0.00	-143.06	0.00	143.06	2,867.21	1,433.60	4,126.90	2,066.52	2.50	-0.29	0.046
88.00	-21.67	-2.09	0.00	-136.71	0.00	136.71	2,824.37	1,412.19	4,003.88	2,004.91	2.68	-0.30	0.045
90.00	-20.65	-2.06	0.00	-132.52	0.00	132.52	2,795.82	1,397.91	3,922.90	1,964.36	2.81	-0.30	0.044
93.00	-20.21	-2.04	0.00	-126.35	0.00	126.35	2,304.06	1,152.03	3,254.27	1,629.55	3.00	-0.32	0.048
95.00	-19.13	-1.99	0.00	-122.27	0.00	122.27	2,286.90	1,143.45	3,196.90	1,600.83	3.14	-0.32	0.047
100.00	-18.59	-1.97	0.00	-112.32	0.00	112.32	2,243.44	1,121.72	3,054.90	1,529.72	3.48	-0.34	0.044
102.50	-18.20	-1.95	0.00	-107.39	0.00	107.39	2,221.40	1,110.70	2,984.67	1,494.55	3.66	-0.35	0.043
102.50	-18.20	-1.95	0.00	-107.39	0.00	107.39	2,221.40	1,110.70	2,984.67	1,494.55	3.66	-0.35	0.080
105.00	-17.42	-1.91	0.00	-102.52	0.00	102.52	2,198.14	1,099.07	2,913.61	1,458.97	3.85	-0.36	0.078
110.00	-16.66	-1.88	0.00	-92.95	0.00	92.95	2,138.65	1,069.33	2,757.31	1,380.70	4.24	-0.39	0.075
115.00	-16.43	-1.87	0.00	-83.58	0.00	83.58	2,079.16	1,039.58	2,605.31	1,304.59	4.67	-0.42	0.072
116.50	-15.66	-1.82	0.00	-80.78	0.00	80.78	2,061.32	1,030.66	2,560.55	1,282.18	4.81	-0.43	0.071
120.00	-15.44	-1.81	0.00	-74.42	0.00	74.42	2,019.67	1,009.84	2,457.62	1,230.64	5.13	-0.46	0.068
121.00	-14.92	-1.77	0.00	-72.61	0.00	72.61	1,570.79	785.40	1,940.61	971.75	5.23	-0.46	0.084
125.00	-14.66	-1.76	0.00	-65.53	0.00	65.53	1,545.06	772.53	1,864.04	933.41	5.63	-0.49	0.080
127.00	-11.84	-1.53	0.00	-62.02	0.00	62.02	1,531.99	766.00	1,826.09	914.40	5.83	-0.50	0.076
130.00	-11.26	-1.49	0.00	-57.42	0.00	57.42	1,512.16	756.08	1,769.59	886.11	6.15	-0.52	0.072
135.00	-10.68	-1.44	0.00	-49.97	0.00	49.97	1,478.46	739.23	1,676.61	839.55	6.72	-0.55	0.067
140.00	-10.12	-1.39	0.00	-42.76	0.00	42.76	1,443.96	721.98	1,585.19	793.77	7.32	-0.59	0.061
145.00	-9.83	-1.37	0.00	-35.80	0.00	35.80	1,408.39	704.19	1,495.13	748.68	7.95	-0.61	0.055
146.00	-9.37	-1.32	0.00	-34.44	0.00	34.44	1,398.87	699.44	1,474.90	738.54	8.08	-0.62	0.053
149.00	-9.23	-1.30	0.00	-30.48	0.00	30.48	1,370.32	685.16	1,415.01	708.56	8.47	-0.64	0.050
150.00	-8.88	-1.27	0.00	-29.18	0.00	29.18	1,360.80	680.40	1,395.33	698.70	8.60	-0.64	0.048
152.50	-8.67	-1.24	0.00	-26.01	0.00	26.01	947.27	473.64	973.73	487.59	8.94	-0.65	0.063
155.00	-8.26	-1.20	0.00	-22.90	0.00	22.90	936.35	468.18	945.55	473.48	9.29	-0.67	0.057
160.00	-7.87	-1.15	0.00	-16.91	0.00	16.91	913.91	456.96	889.79	445.55	10.00	-0.69	0.047
165.00	-7.71	-1.13	0.00	-11.16	0.00	11.16	890.67	445.33	834.90	418.07	10.74	-0.71	0.035
167.00	-3.92	-0.62	0.00	-8.90	0.00	8.90	881.14	440.57	813.20	407.21	11.04	-0.72	0.026
170.00	-3.86	-0.61	0.00	-7.04	0.00	7.04	866.62	433.31	780.97	391.06	11.49	-0.73	0.022
171.00	-3.57	-0.57	0.00	-6.43	0.00	6.43	861.71	430.86	770.30	385.72	11.64	-0.73	0.021
175.00	-3.29	-0.53	0.00	-4.15	0.00	4.15	841.76	420.88	728.08	364.58	12.26	-0.74	0.015

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

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180.00	-3.13	-0.50	0.00	-1.51	0.00	1.51	816.11	408.05	676.33	338.67	13.03	-0.74	0.008
183.00	0.00	-0.46	0.00	0.00	0.00	0.00	800.33	400.16	645.87	323.41	13.50	-0.74	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):	0.19
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}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	3.13
Redundancy Factor (ρ):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
54	181.50	188	1.859	1.821	1.082	0.362	59	233
53	177.50	320	1.778	1.441	0.940	0.308	85	397
52	173.00	262	1.689	1.081	0.798	0.252	57	326
51	170.50	71	1.641	0.910	0.727	0.223	14	89
50	168.50	216	1.602	0.786	0.673	0.201	38	268
49	166.00	183	1.555	0.646	0.611	0.175	28	227
48	162.50	464	1.490	0.477	0.531	0.141	57	575
47	157.50	473	1.400	0.284	0.432	0.096	39	586
46	153.75	240	1.334	0.171	0.367	0.066	14	297
45	151.25	409	1.291	0.108	0.328	0.048	17	508
44	149.50	165	1.261	0.070	0.303	0.036	5	205
43	147.50	343	1.228	0.033	0.276	0.023	7	426
42	145.50	130	1.195	0.000	0.251	0.011	1	161
41	142.50	657	1.146	-0.040	0.217	-0.005	-3	816
40	137.50	669	1.067	-0.087	0.167	-0.028	-16	830
39	132.50	681	0.991	-0.112	0.127	-0.046	-27	845
38	128.50	414	0.932	-0.121	0.100	-0.056	-20	514
37	126.00	303	0.896	-0.122	0.086	-0.061	-16	376
36	123.00	611	0.854	-0.119	0.071	-0.065	-34	758
35	120.50	254	0.819	-0.115	0.060	-0.066	-15	315
34	118.25	897	0.789	-0.110	0.051	-0.067	-52	1,113
33	115.75	263	0.756	-0.102	0.042	-0.066	-15	326
32	112.50	886	0.714	-0.091	0.033	-0.062	-48	1,099
31	107.50	901	0.652	-0.071	0.022	-0.052	-41	1,117
30	103.75	456	0.607	-0.056	0.015	-0.041	-16	566
29	101.25	627	0.579	-0.045	0.012	-0.032	-18	777
28	97.50	1,264	0.536	-0.030	0.009	-0.018	-20	1,568
27	94.00	510	0.499	-0.016	0.007	-0.004	-2	632
26	91.50	1,182	0.472	-0.006	0.006	0.006	7	1,467
25	89.00	795	0.447	0.003	0.006	0.016	11	986
24	86.50	842	0.422	0.011	0.006	0.025	18	1,044
23	82.50	1,417	0.384	0.023	0.007	0.037	46	1,758
22	77.50	1,434	0.339	0.036	0.009	0.049	60	1,780
21	72.50	1,452	0.297	0.046	0.013	0.056	71	1,802

20	67.50	1,470	0.257	0.054	0.016	0.061	77	1,824
19	64.25	444	0.233	0.058	0.019	0.062	24	551
18	61.75	1,767	0.215	0.061	0.021	0.063	96	2,193
17	59.00	1,019	0.196	0.063	0.024	0.063	56	1,264
16	56.50	1,054	0.180	0.065	0.026	0.063	57	1,307
15	52.50	1,775	0.156	0.067	0.029	0.062	96	2,202
14	47.50	1,799	0.127	0.070	0.033	0.061	96	2,231
13	44.00	726	0.109	0.071	0.036	0.061	38	901
12	41.50	1,096	0.097	0.071	0.038	0.060	57	1,360
11	37.50	1,846	0.079	0.072	0.040	0.059	94	2,290
10	32.50	3,015	0.060	0.072	0.041	0.058	151	3,741
9	29.25	914	0.048	0.071	0.042	0.057	45	1,134
8	26.75	1,309	0.040	0.070	0.042	0.056	64	1,624
7	23.75	942	0.032	0.069	0.041	0.055	45	1,169
6	21.25	948	0.025	0.067	0.040	0.054	44	1,176
5	17.50	1,913	0.017	0.062	0.037	0.052	85	2,374
4	12.50	1,937	0.009	0.053	0.031	0.046	77	2,403
3	8.50	1,173	0.004	0.042	0.023	0.039	39	1,456
2	6.00	787	0.002	0.032	0.018	0.032	22	976
1	2.50	1,621	0.000	0.015	0.008	0.017	24	2,012
DragonWave Horizon C	183.00	21	1.890	1.980	1.140	0.383	7	26
Alcatel-Lucent RRH2x	183.00	317	1.890	1.980	1.140	0.383	105	394
Alcatel-Lucent 1900	183.00	180	1.890	1.980	1.140	0.383	60	223
Decibel DB844H90E-XY	183.00	42	1.890	1.980	1.140	0.383	14	52
Nokia 2.5G MAA - AAH	183.00	311	1.890	1.980	1.140	0.383	103	386
DragonWave A-ANT-18G	183.00	54	1.890	1.980	1.140	0.383	18	67
Andrew 844G65VTZASX	183.00	48	1.890	1.980	1.140	0.383	16	60
Commscope NNVV-	183.00	232	1.890	1.980	1.140	0.383	77	288
Site Pro 1 RMQP-496-	183.00	2,449	1.890	1.980	1.140	0.383	812	3,038
RFS APXV18-206517S-C	171.00	79	1.650	0.943	0.740	0.229	16	98
CCI TPX-070821	167.00	45	1.574	0.700	0.635	0.185	7	56
Kaelus DBCT108F1V92-	167.00	83	1.574	0.700	0.635	0.185	13	103
Commscope WCS-	167.00	30	1.574	0.700	0.635	0.185	5	37
Powerwave Allgon LGP	167.00	85	1.574	0.700	0.635	0.185	14	105
Raycap DC6-48-60-18-	167.00	40	1.574	0.700	0.635	0.185	6	50
Raycap DC6-48-60-18-	167.00	32	1.574	0.700	0.635	0.185	5	39
Ericsson RRUS 4426 B	167.00	145	1.574	0.700	0.635	0.185	23	180
Ericsson RRUS 4478 B	167.00	180	1.574	0.700	0.635	0.185	29	223
Ericsson RRUS 4478 B	167.00	180	1.574	0.700	0.635	0.185	29	223
Ericsson RRUS 11 (Ba	167.00	132	1.574	0.700	0.635	0.185	21	164
Ericsson RRUS 32 B2	167.00	159	1.574	0.700	0.635	0.185	26	197
Ericsson RRUS-32 (77	167.00	231	1.574	0.700	0.635	0.185	37	287
Powerwave Allgon 777	167.00	105	1.574	0.700	0.635	0.185	17	130
CCI OPA-65R-LCUU-H4	167.00	171	1.574	0.700	0.635	0.185	27	212
Quintel QS66512-2	167.00	333	1.574	0.700	0.635	0.185	54	413
Kathrein Scala 80010	167.00	245	1.574	0.700	0.635	0.185	39	304
Flat Platform w/ Han	167.00	2,000	1.574	0.700	0.635	0.185	321	2,481
Kathrein Scala Smart	146.00	10	1.203	0.008	0.257	0.014	0	12
Andrew ETW200VS12UB	146.00	33	1.203	0.008	0.257	0.014	0	41
Andrew ETW190VS12UB	146.00	33	1.203	0.008	0.257	0.014	0	41
Andrew SBNHH-1D65A	146.00	123	1.203	0.008	0.257	0.014	2	152
Flush Mounts	145.00	200	1.187	-0.008	0.245	0.009	1	248
RFS FD9R6004/1C-3L	127.00	19	0.910	-0.122	0.091	-0.059	-1	23
Alcatel-Lucent RRH2X	127.00	138	0.910	-0.122	0.091	-0.059	-7	171
Alcatel-Lucent RRH2X	127.00	132	0.910	-0.122	0.091	-0.059	-7	164
Alcatel-Lucent RRH2x	127.00	132	0.910	-0.122	0.091	-0.059	-7	164
RFS DB-T1-6Z-8AB-0Z	127.00	44	0.910	-0.122	0.091	-0.059	-2	55
RFS DB-T1-6Z-8AB-0Z	127.00	44	0.910	-0.122	0.091	-0.059	-2	55
Andrew HBXX-6516DS-A	127.00	92	0.910	-0.122	0.091	-0.059	-5	114
Andrew LNX-4514DS-A1	127.00	89	0.910	-0.122	0.091	-0.059	-5	110
Antel BXA-80063/6CF	127.00	45	0.910	-0.122	0.091	-0.059	-2	55
Andrew HBXX-6517DS-A	127.00	129	0.910	-0.122	0.091	-0.059	-7	160
Flat Platform w/ Han	127.00	2,000	0.910	-0.122	0.091	-0.059	-102	2,481
Thales PCS VP/360/2	7.00	1	0.003	0.036	0.020	0.035	0	1

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

Stand-Off	7.00	75	0.003	0.036	0.020	0.035	2	93
		58,798	96.847	37.329	33.106	8.854	3,342	72,953

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)
54	181.50	188	1.859	1.821	1.082	0.362	59	161
53	177.50	320	1.778	1.441	0.940	0.308	85	275
52	173.00	262	1.689	1.081	0.798	0.252	57	225
51	170.50	71	1.641	0.910	0.727	0.223	14	61
50	168.50	216	1.602	0.786	0.673	0.201	38	186
49	166.00	183	1.555	0.646	0.611	0.175	28	157
48	162.50	464	1.490	0.477	0.531	0.141	57	399
47	157.50	473	1.400	0.284	0.432	0.096	39	406
46	153.75	240	1.334	0.171	0.367	0.066	14	206
45	151.25	409	1.291	0.108	0.328	0.048	17	352
44	149.50	165	1.261	0.070	0.303	0.036	5	142
43	147.50	343	1.228	0.033	0.276	0.023	7	295
42	145.50	130	1.195	0.000	0.251	0.011	1	112
41	142.50	657	1.146	-0.040	0.217	-0.005	-3	565
40	137.50	669	1.067	-0.087	0.167	-0.028	-16	575
39	132.50	681	0.991	-0.112	0.127	-0.046	-27	585
38	128.50	414	0.932	-0.121	0.100	-0.056	-20	356
37	126.00	303	0.896	-0.122	0.086	-0.061	-16	260
36	123.00	611	0.854	-0.119	0.071	-0.065	-34	525
35	120.50	254	0.819	-0.115	0.060	-0.066	-15	218
34	118.25	897	0.789	-0.110	0.051	-0.067	-52	771
33	115.75	263	0.756	-0.102	0.042	-0.066	-15	226
32	112.50	886	0.714	-0.091	0.033	-0.062	-48	761
31	107.50	901	0.652	-0.071	0.022	-0.052	-41	774
30	103.75	456	0.607	-0.056	0.015	-0.041	-16	392
29	101.25	627	0.579	-0.045	0.012	-0.032	-18	538
28	97.50	1,264	0.536	-0.030	0.009	-0.018	-20	1,086
27	94.00	510	0.499	-0.016	0.007	-0.004	-2	438
26	91.50	1,182	0.472	-0.006	0.006	0.006	7	1,016
25	89.00	795	0.447	0.003	0.006	0.016	11	683
24	86.50	842	0.422	0.011	0.006	0.025	18	723
23	82.50	1,417	0.384	0.023	0.007	0.037	46	1,217
22	77.50	1,434	0.339	0.036	0.009	0.049	60	1,233
21	72.50	1,452	0.297	0.046	0.013	0.056	71	1,248
20	67.50	1,470	0.257	0.054	0.016	0.061	77	1,263
19	64.25	444	0.233	0.058	0.019	0.062	24	382
18	61.75	1,767	0.215	0.061	0.021	0.063	96	1,519
17	59.00	1,019	0.196	0.063	0.024	0.063	56	876
16	56.50	1,054	0.180	0.065	0.026	0.063	57	905
15	52.50	1,775	0.156	0.067	0.029	0.062	96	1,525
14	47.50	1,799	0.127	0.070	0.033	0.061	96	1,545
13	44.00	726	0.109	0.071	0.036	0.061	38	624
12	41.50	1,096	0.097	0.071	0.038	0.060	57	942
11	37.50	1,846	0.079	0.072	0.040	0.059	94	1,586
10	32.50	3,015	0.060	0.072	0.041	0.058	151	2,591
9	29.25	914	0.048	0.071	0.042	0.057	45	785
8	26.75	1,309	0.040	0.070	0.042	0.056	64	1,124
7	23.75	942	0.032	0.069	0.041	0.055	45	809
6	21.25	948	0.025	0.067	0.040	0.054	44	814
5	17.50	1,913	0.017	0.062	0.037	0.052	85	1,644
4	12.50	1,937	0.009	0.053	0.031	0.046	77	1,664
3	8.50	1,173	0.004	0.042	0.023	0.039	39	1,008

Site Number: 302535

Code: ANSI/TIA-222-G

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

2	6.00	787	0.002	0.032	0.018	0.032	22	676
1	2.50	1,621	0.000	0.015	0.008	0.017	24	1,393
DragonWave Horizon C	183.00	21	1.890	1.980	1.140	0.383	7	18
Alcatel-Lucent RRH2x	183.00	317	1.890	1.980	1.140	0.383	105	273
Alcatel-Lucent 1900	183.00	180	1.890	1.980	1.140	0.383	60	155
Decibel DB844H90E-XY	183.00	42	1.890	1.980	1.140	0.383	14	36
Nokia 2.5G MAA - AAH	183.00	311	1.890	1.980	1.140	0.383	103	267
DragonWave A-ANT-18G	183.00	54	1.890	1.980	1.140	0.383	18	47
Andrew 844G65VTZASX	183.00	48	1.890	1.980	1.140	0.383	16	41
Commscope NNVV-	183.00	232	1.890	1.980	1.140	0.383	77	200
Site Pro 1 RMQP-496-	183.00	2,449	1.890	1.980	1.140	0.383	812	2,104
RFS APXV18-206517S-C	171.00	79	1.650	0.943	0.740	0.229	16	68
CCI TPX-070821	167.00	45	1.574	0.700	0.635	0.185	7	39
Kaelus DBCT108F1V92-	167.00	83	1.574	0.700	0.635	0.185	13	72
Commscope WCS-	167.00	30	1.574	0.700	0.635	0.185	5	25
Powerwave Allgon LGP	167.00	85	1.574	0.700	0.635	0.185	14	73
Raycap DC6-48-60-18-	167.00	40	1.574	0.700	0.635	0.185	6	34
Raycap DC6-48-60-18-	167.00	32	1.574	0.700	0.635	0.185	5	27
Ericsson RRUS 4426 B	167.00	145	1.574	0.700	0.635	0.185	23	125
Ericsson RRUS 4478 B	167.00	180	1.574	0.700	0.635	0.185	29	154
Ericsson RRUS 4478 B	167.00	180	1.574	0.700	0.635	0.185	29	154
Ericsson RRUS 11 (Ba	167.00	132	1.574	0.700	0.635	0.185	21	113
Ericsson RRUS 32 B2	167.00	159	1.574	0.700	0.635	0.185	26	137
Ericsson RRUS-32 (77	167.00	231	1.574	0.700	0.635	0.185	37	198
Powerwave Allgon 777	167.00	105	1.574	0.700	0.635	0.185	17	90
CCI OPA-65R-LCUU-H4	167.00	171	1.574	0.700	0.635	0.185	27	147
Quintel QS66512-2	167.00	333	1.574	0.700	0.635	0.185	54	286
Kathrein Scala 80010	167.00	245	1.574	0.700	0.635	0.185	39	210
Flat Platform w/ Han	167.00	2,000	1.574	0.700	0.635	0.185	321	1,719
Kathrein Scala Smart	146.00	10	1.203	0.008	0.257	0.014	0	9
Andrew ETW200VS12UB	146.00	33	1.203	0.008	0.257	0.014	0	28
Andrew ETW190VS12UB	146.00	33	1.203	0.008	0.257	0.014	0	28
Andrew SBNHH-1D65A	146.00	123	1.203	0.008	0.257	0.014	2	105
Flush Mounts	145.00	200	1.187	-0.008	0.245	0.009	1	172
RFS FD9R6004/1C-3L	127.00	19	0.910	-0.122	0.091	-0.059	-1	16
Alcatel-Lucent RRH2X	127.00	138	0.910	-0.122	0.091	-0.059	-7	119
Alcatel-Lucent RRH2X	127.00	132	0.910	-0.122	0.091	-0.059	-7	113
Alcatel-Lucent RRH2x	127.00	132	0.910	-0.122	0.091	-0.059	-7	113
RFS DB-T1-6Z-8AB-OZ	127.00	44	0.910	-0.122	0.091	-0.059	-2	38
RFS DB-T1-6Z-8AB-OZ	127.00	44	0.910	-0.122	0.091	-0.059	-2	38
Andrew HBXX-6516DS-A	127.00	92	0.910	-0.122	0.091	-0.059	-5	79
Andrew LNX-4514DS-A1	127.00	89	0.910	-0.122	0.091	-0.059	-5	76
Antel BXA-80063/6CF	127.00	45	0.910	-0.122	0.091	-0.059	-2	38
Andrew HBXX-6517DS-A	127.00	129	0.910	-0.122	0.091	-0.059	-7	111
Flat Platform w/ Han	127.00	2,000	0.910	-0.122	0.091	-0.059	-102	1,719
Thales PCS VP/360/2	7.00	1	0.003	0.036	0.020	0.035	0	1
Stand-Off	7.00	75	0.003	0.036	0.020	0.035	2	64
		58,798	96.847	37.329	33.106	8.854	3,342	50,522

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	-70.94	-3.33	0.00	-446.64	0.00	446.64	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.090
5.00	-69.96	-3.33	0.00	-429.99	0.00	429.99	4,284.85	2,142.42	8,295.82	4,154.08	0.01	-0.02	0.090
7.00	-68.41	-3.30	0.00	-423.34	0.00	423.34	4,253.12	2,126.56	8,172.78	4,092.46	0.02	-0.03	0.089
10.00	-66.01	-3.24	0.00	-413.45	0.00	413.45	4,205.53	2,102.76	7,989.95	4,000.91	0.04	-0.04	0.088
15.00	-63.63	-3.17	0.00	-397.27	0.00	397.27	4,126.21	2,063.10	7,689.82	3,850.62	0.10	-0.06	0.088
20.00	-62.46	-3.14	0.00	-381.40	0.00	381.40	4,046.89	2,023.44	7,395.44	3,703.21	0.18	-0.08	0.087
22.50	-61.29	-3.11	0.00	-373.54	0.00	373.54	4,007.23	2,003.61	7,250.40	3,630.59	0.22	-0.10	0.086
22.50	-61.29	-3.11	0.00	-373.54	0.00	373.54	4,007.23	2,003.61	7,250.40	3,630.59	0.22	-0.10	0.086
25.00	-59.66	-3.06	0.00	-365.76	0.00	365.76	3,967.57	1,983.78	7,106.80	3,558.68	0.28	-0.11	0.086
28.50	-58.53	-3.02	0.00	-355.07	0.00	355.07	3,912.04	1,956.02	6,908.17	3,459.22	0.36	-0.12	0.085
30.00	-54.79	-2.88	0.00	-350.53	0.00	350.53	3,888.25	1,944.12	6,823.91	3,417.03	0.40	-0.13	0.084
35.00	-52.50	-2.80	0.00	-336.16	0.00	336.16	3,899.62	1,949.81	6,864.12	3,437.16	0.55	-0.15	0.081
40.00	-51.14	-2.75	0.00	-322.18	0.00	322.18	3,820.30	1,910.15	6,586.15	3,297.97	0.72	-0.17	0.080
43.00	-50.24	-2.72	0.00	-313.93	0.00	313.93	3,772.71	1,886.36	6,422.13	3,215.84	0.83	-0.19	0.079
43.00	-50.24	-2.72	0.00	-313.93	0.00	313.93	3,772.71	1,886.36	6,422.13	3,215.84	0.83	-0.19	0.079
45.00	-48.00	-2.63	0.00	-308.49	0.00	308.49	3,740.98	1,870.49	6,313.93	3,161.66	0.91	-0.19	0.079
50.00	-45.80	-2.54	0.00	-295.35	0.00	295.35	3,661.66	1,830.83	6,047.45	3,028.22	1.13	-0.22	0.078
55.00	-44.49	-2.49	0.00	-282.64	0.00	282.64	3,582.34	1,791.17	5,786.72	2,897.66	1.36	-0.24	0.077
58.00	-43.23	-2.44	0.00	-275.16	0.00	275.16	3,534.75	1,767.38	5,633.04	2,820.71	1.52	-0.25	0.077
60.00	-41.04	-2.34	0.00	-270.28	0.00	270.28	3,503.02	1,751.51	5,531.73	2,769.98	1.62	-0.26	0.075
63.50	-40.48	-2.33	0.00	-262.08	0.00	262.08	3,173.44	1,586.72	5,061.87	2,534.70	1.82	-0.28	0.074
65.00	-38.66	-2.25	0.00	-258.59	0.00	258.59	3,152.76	1,576.38	4,994.62	2,501.02	1.91	-0.28	0.073
70.00	-36.86	-2.19	0.00	-247.34	0.00	247.34	3,081.37	1,540.68	4,769.94	2,388.51	2.22	-0.31	0.072
75.00	-35.08	-2.13	0.00	-236.41	0.00	236.41	3,009.98	1,504.99	4,550.42	2,278.59	2.56	-0.33	0.071
80.00	-33.32	-2.09	0.00	-225.74	0.00	225.74	2,938.59	1,469.30	4,336.07	2,171.26	2.92	-0.36	0.070
85.00	-32.27	-2.08	0.00	-215.28	0.00	215.28	2,867.21	1,433.60	4,126.90	2,066.52	3.31	-0.39	0.070
88.00	-31.29	-2.07	0.00	-209.05	0.00	209.05	2,824.37	1,412.19	4,003.88	2,004.91	3.56	-0.40	0.069
90.00	-29.82	-2.06	0.00	-204.91	0.00	204.91	2,795.82	1,397.91	3,922.90	1,964.36	3.73	-0.42	0.068
93.00	-29.19	-2.06	0.00	-198.73	0.00	198.73	2,304.06	1,152.03	3,254.27	1,629.55	4.00	-0.43	0.074
95.00	-27.62	-2.08	0.00	-194.61	0.00	194.61	2,286.90	1,143.45	3,196.90	1,600.83	4.18	-0.44	0.073
100.00	-26.84	-2.10	0.00	-184.21	0.00	184.21	2,243.44	1,121.72	3,054.90	1,529.72	4.66	-0.47	0.072
102.50	-26.27	-2.12	0.00	-178.95	0.00	178.95	2,221.40	1,110.70	2,984.67	1,494.55	4.92	-0.49	0.071
102.50	-26.27	-2.12	0.00	-178.95	0.00	178.95	2,221.40	1,110.70	2,984.67	1,494.55	4.92	-0.49	0.132
105.00	-25.16	-2.17	0.00	-173.65	0.00	173.65	2,198.14	1,099.07	2,913.61	1,458.97	5.18	-0.50	0.130
110.00	-24.05	-2.23	0.00	-162.81	0.00	162.81	2,138.65	1,069.33	2,757.31	1,380.70	5.73	-0.56	0.129
115.00	-23.73	-2.26	0.00	-151.67	0.00	151.67	2,079.16	1,039.58	2,605.31	1,304.59	6.35	-0.62	0.128
116.50	-22.61	-2.31	0.00	-148.29	0.00	148.29	2,061.32	1,030.66	2,560.55	1,282.18	6.55	-0.64	0.127
120.00	-22.29	-2.33	0.00	-140.21	0.00	140.21	2,019.67	1,009.84	2,457.62	1,230.64	7.03	-0.68	0.125
121.00	-21.53	-2.37	0.00	-137.88	0.00	137.88	1,570.79	785.40	1,940.61	971.75	7.17	-0.69	0.156
125.00	-21.16	-2.39	0.00	-128.42	0.00	128.42	1,545.06	772.53	1,864.04	933.41	7.77	-0.74	0.151
127.00	-17.09	-2.51	0.00	-123.64	0.00	123.64	1,531.99	766.00	1,826.09	914.40	8.08	-0.76	0.146
130.00	-16.24	-2.55	0.00	-116.10	0.00	116.10	1,512.16	756.08	1,769.59	886.11	8.57	-0.81	0.142
135.00	-15.41	-2.57	0.00	-103.37	0.00	103.37	1,478.46	739.23	1,676.61	839.55	9.45	-0.87	0.134
140.00	-14.59	-2.57	0.00	-90.53	0.00	90.53	1,443.96	721.98	1,585.19	793.77	10.40	-0.94	0.124
145.00	-14.18	-2.57	0.00	-77.66	0.00	77.66	1,408.39	704.19	1,495.13	748.68	11.42	-1.00	0.114
146.00	-13.50	-2.56	0.00	-75.09	0.00	75.09	1,398.87	699.44	1,474.90	738.54	11.63	-1.01	0.111
149.00	-13.30	-2.55	0.00	-67.42	0.00	67.42	1,370.32	685.16	1,415.01	708.56	12.28	-1.05	0.105
150.00	-12.79	-2.53	0.00	-64.87	0.00	64.87	1,360.80	680.40	1,395.33	698.70	12.50	-1.06	0.102
152.50	-12.49	-2.52	0.00	-58.53	0.00	58.53	947.27	473.64	973.73	487.59	13.06	-1.09	0.133
155.00	-11.91	-2.48	0.00	-52.24	0.00	52.24	936.35	468.18	945.55	473.48	13.64	-1.11	0.123
160.00	-11.33	-2.42	0.00	-39.85	0.00	39.85	913.91	456.96	889.79	445.55	14.84	-1.17	0.102
165.00	-11.10	-2.39	0.00	-27.75	0.00	27.75	890.67	445.33	834.90	418.07	16.09	-1.22	0.079
167.00	-5.64	-1.57	0.00	-22.97	0.00	22.97	881.14	440.57	813.20	407.21	16.61	-1.24	0.063
170.00	-5.56	-1.55	0.00	-18.27	0.00	18.27	866.62	433.31	780.97	391.06	17.39	-1.26	0.053
171.00	-5.13	-1.47	0.00	-16.72	0.00	16.72	861.71	430.86	770.30	385.72	17.66	-1.26	0.049
175.00	-4.74	-1.38	0.00	-10.83	0.00	10.83	841.76	420.88	728.08	364.58	18.73	-1.28	0.035

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

180.00	-4.51	-1.31	0.00	-3.94	0.00	3.94	816.11	408.05	676.33	338.67	20.08	-1.30	0.017
183.00	0.00	-1.21	0.00	0.00	0.00	0.00	800.33	400.16	645.87	323.41	20.90	-1.30	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	-49.13	-3.33	0.00	-435.59	0.00	435.59	4,364.17	2,182.08	8,607.44	4,310.12	0.00	0.00	0.084
5.00	-48.45	-3.32	0.00	-418.96	0.00	418.96	4,284.85	2,142.42	8,295.82	4,154.08	0.01	-0.02	0.084
7.00	-47.38	-3.28	0.00	-412.33	0.00	412.33	4,253.12	2,126.56	8,172.78	4,092.46	0.02	-0.03	0.083
10.00	-45.71	-3.22	0.00	-402.49	0.00	402.49	4,205.53	2,102.76	7,989.95	4,000.91	0.04	-0.04	0.083
15.00	-44.07	-3.15	0.00	-386.40	0.00	386.40	4,126.21	2,063.10	7,689.82	3,850.62	0.10	-0.06	0.082
20.00	-43.25	-3.11	0.00	-370.67	0.00	370.67	4,046.89	2,023.44	7,395.44	3,703.21	0.17	-0.08	0.081
22.50	-42.44	-3.07	0.00	-362.88	0.00	362.88	4,007.23	2,003.61	7,250.40	3,630.59	0.22	-0.09	0.081
22.50	-42.44	-3.07	0.00	-362.88	0.00	362.88	4,007.23	2,003.61	7,250.40	3,630.59	0.22	-0.09	0.081
25.00	-41.32	-3.02	0.00	-355.20	0.00	355.20	3,967.57	1,983.78	7,106.80	3,558.68	0.27	-0.10	0.080
28.50	-40.53	-2.98	0.00	-344.63	0.00	344.63	3,912.04	1,956.02	6,908.17	3,459.22	0.35	-0.12	0.080
30.00	-37.94	-2.83	0.00	-340.17	0.00	340.17	3,888.25	1,944.12	6,823.91	3,417.03	0.39	-0.13	0.078
35.00	-36.35	-2.75	0.00	-326.01	0.00	326.01	3,899.62	1,949.81	6,864.12	3,437.16	0.53	-0.15	0.075
40.00	-35.41	-2.70	0.00	-312.27	0.00	312.27	3,820.30	1,910.15	6,586.15	3,297.97	0.70	-0.17	0.075
43.00	-34.79	-2.66	0.00	-304.18	0.00	304.18	3,772.71	1,886.36	6,422.13	3,215.84	0.81	-0.18	0.074
43.00	-34.79	-2.66	0.00	-304.18	0.00	304.18	3,772.71	1,886.36	6,422.13	3,215.84	0.81	-0.18	0.074
45.00	-33.24	-2.57	0.00	-298.85	0.00	298.85	3,740.98	1,870.49	6,313.93	3,161.66	0.89	-0.19	0.074
50.00	-31.72	-2.48	0.00	-285.99	0.00	285.99	3,661.66	1,830.83	6,047.45	3,028.22	1.09	-0.21	0.073
55.00	-30.81	-2.43	0.00	-273.57	0.00	273.57	3,582.34	1,791.17	5,786.72	2,897.66	1.33	-0.23	0.072
58.00	-29.93	-2.38	0.00	-266.28	0.00	266.28	3,534.75	1,767.38	5,633.04	2,820.71	1.47	-0.24	0.072
60.00	-28.42	-2.28	0.00	-261.53	0.00	261.53	3,503.02	1,751.51	5,531.73	2,769.98	1.58	-0.25	0.070
63.50	-28.03	-2.26	0.00	-253.54	0.00	253.54	3,173.44	1,586.72	5,061.87	2,534.70	1.77	-0.27	0.069
65.00	-26.77	-2.18	0.00	-250.15	0.00	250.15	3,152.76	1,576.38	4,994.62	2,501.02	1.85	-0.27	0.068
70.00	-25.52	-2.12	0.00	-239.23	0.00	239.23	3,081.37	1,540.68	4,769.94	2,388.51	2.15	-0.30	0.068
75.00	-24.29	-2.06	0.00	-228.63	0.00	228.63	3,009.98	1,504.99	4,550.42	2,278.59	2.48	-0.32	0.067
80.00	-23.07	-2.02	0.00	-218.32	0.00	218.32	2,938.59	1,469.30	4,336.07	2,171.26	2.84	-0.35	0.066
85.00	-22.35	-2.01	0.00	-208.22	0.00	208.22	2,867.21	1,433.60	4,126.90	2,066.52	3.22	-0.38	0.065
88.00	-21.66	-2.00	0.00	-202.20	0.00	202.20	2,824.37	1,412.19	4,003.88	2,004.91	3.46	-0.39	0.065
90.00	-20.65	-1.99	0.00	-198.21	0.00	198.21	2,795.82	1,397.91	3,922.90	1,964.36	3.63	-0.40	0.063
93.00	-20.21	-1.99	0.00	-192.25	0.00	192.25	2,304.06	1,152.03	3,254.27	1,629.55	3.88	-0.42	0.070
95.00	-19.12	-2.01	0.00	-188.28	0.00	188.28	2,286.90	1,143.45	3,196.90	1,600.83	4.06	-0.43	0.069
100.00	-18.58	-2.03	0.00	-178.24	0.00	178.24	2,243.44	1,121.72	3,054.90	1,529.72	4.53	-0.46	0.067
102.50	-18.19	-2.05	0.00	-173.17	0.00	173.17	2,221.40	1,110.70	2,984.67	1,494.55	4.77	-0.47	0.066
102.50	-18.19	-2.05	0.00	-173.17	0.00	173.17	2,221.40	1,110.70	2,984.67	1,494.55	4.77	-0.47	0.124
105.00	-17.42	-2.09	0.00	-168.05	0.00	168.05	2,198.14	1,099.07	2,913.61	1,458.97	5.02	-0.49	0.123
110.00	-16.65	-2.15	0.00	-157.60	0.00	157.60	2,138.65	1,069.33	2,757.31	1,380.70	5.56	-0.54	0.122
115.00	-16.42	-2.17	0.00	-146.86	0.00	146.86	2,079.16	1,039.58	2,605.31	1,304.59	6.16	-0.60	0.120
116.50	-15.65	-2.22	0.00	-143.61	0.00	143.61	2,061.32	1,030.66	2,560.55	1,282.18	6.35	-0.62	0.120
120.00	-15.43	-2.24	0.00	-135.83	0.00	135.83	2,019.67	1,009.84	2,457.62	1,230.64	6.82	-0.66	0.118
121.00	-14.91	-2.28	0.00	-133.59	0.00	133.59	1,570.79	785.40	1,940.61	971.75	6.96	-0.67	0.147
125.00	-14.64	-2.30	0.00	-124.48	0.00	124.48	1,545.06	772.53	1,864.04	933.41	7.53	-0.71	0.143
127.00	-11.83	-2.44	0.00	-119.88	0.00	119.88	1,531.99	766.00	1,826.09	914.40	7.84	-0.74	0.139
130.00	-11.24	-2.47	0.00	-112.57	0.00	112.57	1,512.16	756.08	1,769.59	886.11	8.32	-0.78	0.134
135.00	-10.66	-2.49	0.00	-100.23	0.00	100.23	1,478.46	739.23	1,676.61	839.55	9.17	-0.85	0.127
140.00	-10.09	-2.49	0.00	-87.80	0.00	87.80	1,443.96	721.98	1,585.19	793.77	10.09	-0.91	0.118
145.00	-9.81	-2.49	0.00	-75.33	0.00	75.33	1,408.39	704.19	1,495.13	748.68	11.07	-0.97	0.108
146.00	-9.34	-2.48	0.00	-72.84	0.00	72.84	1,398.87	699.44	1,474.90	738.54	11.28	-0.98	0.105
149.00	-9.20	-2.47	0.00	-65.41	0.00	65.41	1,370.32	685.16	1,415.01	708.56	11.90	-1.02	0.099
150.00	-8.85	-2.45	0.00	-62.94	0.00	62.94	1,360.80	680.40	1,395.33	698.70	12.12	-1.03	0.097
152.50	-8.64	-2.44	0.00	-56.81	0.00	56.81	947.27	473.64	973.73	487.59	12.66	-1.05	0.126
155.00	-8.23	-2.40	0.00	-50.71	0.00	50.71	936.35	468.18	945.55	473.48	13.22	-1.08	0.116
160.00	-7.83	-2.34	0.00	-38.71	0.00	38.71	913.91	456.96	889.79	445.55	14.39	-1.14	0.095
165.00	-7.68	-2.31	0.00	-27.01	0.00	27.01	890.67	445.33	834.90	418.07	15.60	-1.18	0.073
167.00	-3.90	-1.53	0.00	-22.38	0.00	22.38	881.14	440.57	813.20	407.21	16.10	-1.20	0.059
170.00	-3.84	-1.51	0.00	-17.80	0.00	17.80	866.62	433.31	780.97	391.06	16.86	-1.22	0.050
171.00	-3.55	-1.43	0.00	-16.29	0.00	16.29	861.71	430.86	770.30	385.72	17.12	-1.23	0.046
175.00	-3.27	-1.34	0.00	-10.56	0.00	10.56	841.76	420.88	728.08	364.58	18.16	-1.25	0.033

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

180.00	-3.11	-1.28	0.00	-3.84	0.00	3.84	816.11	408.05	676.33	338.67	19.47	-1.26	0.015
183.00	0.00	-1.21	0.00	0.00	0.00	0.00	800.33	400.16	645.87	323.41	20.26	-1.26	0.000

Site Number: 302535

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Site Name: Milford CT 2, CT

Engineering Number: OAA735853_C3_02

7/13/2018 10:49:55 AM

Customer: AT&T MOBILITY

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	37.90	0.00	70.49	0.00	0.00	4458.86	121.00	0.85
0.9D + 1.6W	37.10	0.00	52.85	0.00	0.00	4268.07	121.00	0.80
1.2D + 1.0Di + 1.0Wi	11.80	0.00	128.90	0.00	0.00	1819.06	121.00	0.50
(1.2 + 0.2Sds) * DL + E ELFM	2.30	0.00	70.94	0.00	0.00	345.38	121.00	0.09
(1.2 + 0.2Sds) * DL + E EMAM	3.33	0.00	70.94	0.00	0.00	446.64	121.00	0.16
(0.9 - 0.2Sds) * DL + E ELFM	2.30	0.00	49.13	0.00	0.00	337.42	121.00	0.08
(0.9 - 0.2Sds) * DL + E EMAM	3.33	0.00	49.13	0.00	0.00	435.59	121.00	0.15
1.0D + 1.0W	8.98	0.00	58.79	0.00	0.00	1036.35	121.00	0.20

Additional Steel Summary

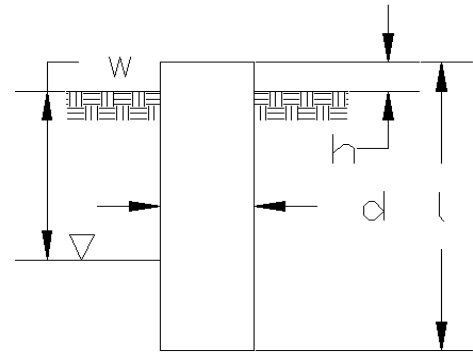
Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Upper Termination Connectors				Lower Termination Connectors				Max Member		
			VQ/I (lb/in)	Applied (kips)	phiVn (kips)	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Pu (kip)	phiPn (kip)	Ratio
0.00	22.5	(4) SOL-#20 All Thre	189.7	3.8	16.8	0.0	12.0	0	0	0.0	12.0	0	0	248.0	343.1	0.723
22.5	43.0	(4) SOL-#20 All Thre	199.4	3.6	16.8	0.0	12.0	0	0	0.0	12.0	0	0	234.9	345.0	0.681
43.0	102.	(4) SOL-#20 All Thre	274.1	8.2	16.8	172.5	12.0	15	16	0.0	12.0	0	0	220.1	330.5	0.666

Site Name: Milford CT2, CT
 Site Number: 302535
 Engineer: Zackaryah.Hughes
 Engineering Number: OAA735853
 Date: 07/13/18

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

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

Analyze or Design a Foundation?	Analyze
Foundation Mapped:	N
Moment (M):	4458.9 k-ft
Shear/Leg (V):	37.9 k
Axial Load (P):	70.5 k
Uplift/Leg (U):	0.0 k
Tower Type (GT / SST / MP):	MP



Diameter of Caisson (d):	6.0 ft
Caisson Embedment (L-h):	20.0 ft
Caisson Height Above Ground (h):	0.5 ft
Depth Below Ground Surface to Water Table (w):	99.0 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Water:	62.4 pcf
Tension Skin Friction/Compression Skin Friction:	1.00
Pullout Angle:	30.0 degrees

Engineer Notes

Soil Mechanical Properties

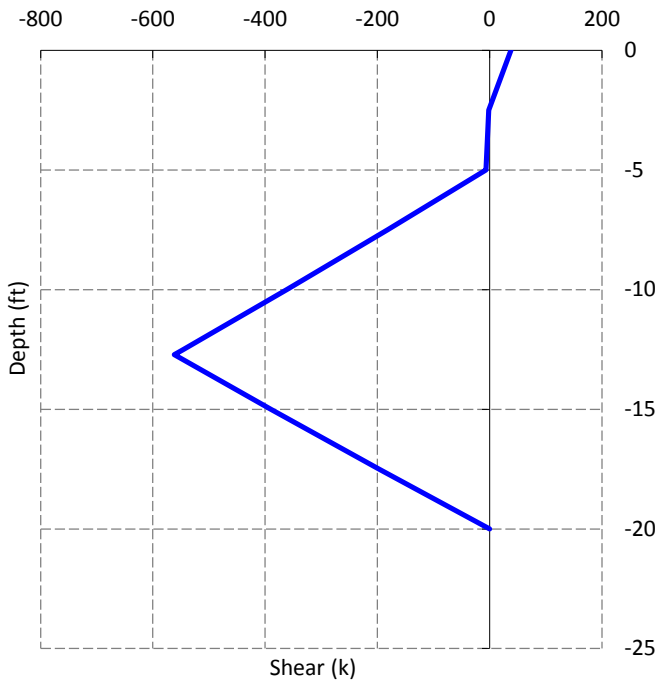
Depth (ft)		γ_{Soil}	Cohesion	ϕ	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	3.5	105	0	0	0	0
3.5	21.0	140	5000	0	2250	69294

Volume of Concrete:	579.6 ft ³ = 21.5 yd ³
Weight of Concrete (Buoyancy Effect Considered):	86.9 k
Average Soil Unit Weight:	133.9 pcf
Skin Friction Resistance:	699.8 k
Compressive Bearing Resistance:	1959.2 k
Pullout Weight (Minus Concrete Weight):	665.2 k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	498.9 k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	1994.3 k
P_u :	81.4 k
$T_u / \phi_s T_n$:	0.00 Result: OK
$P_u / \phi_s P_n$:	0.04 Result: OK
Total Lateral Resistance:	3454.9 k
Inflection Point (Below Ground Surface):	12.7 ft
Design Overturning Moment At Inflection Point (M_D):	4959.8 k-ft
Nominal Moment Capacity ($\phi_s M_n$):	9794.1 k-ft
$M_D / \phi_s M_n$:	0.51 Result: OK
ϕ_s :	0.75

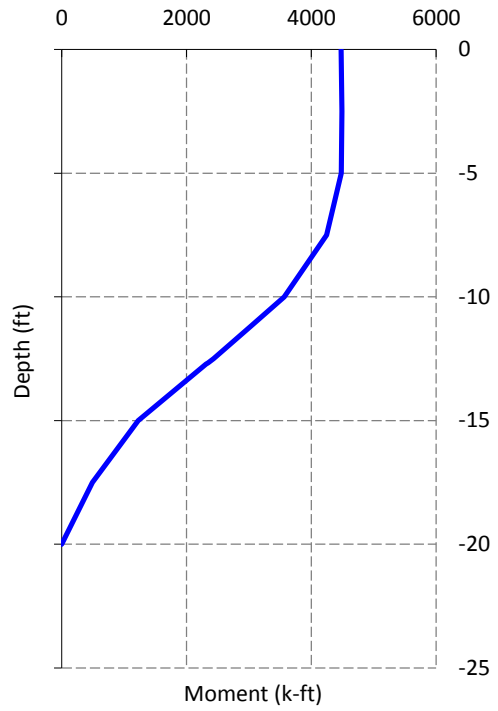
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
# of Vertical Steel Rebars:	33
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	4
Horizontal Tie / Stirrup Area:	0.20 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_C):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	4491.2 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	6808.9 k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.66 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	2779.9 k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	81.4 k
Nominal Compression Capacity ($\phi_P P_n$):	5330.6 k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.02 Result: OK
Bending Reinforcement Ratio:	0.013 ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.66 Result: OK

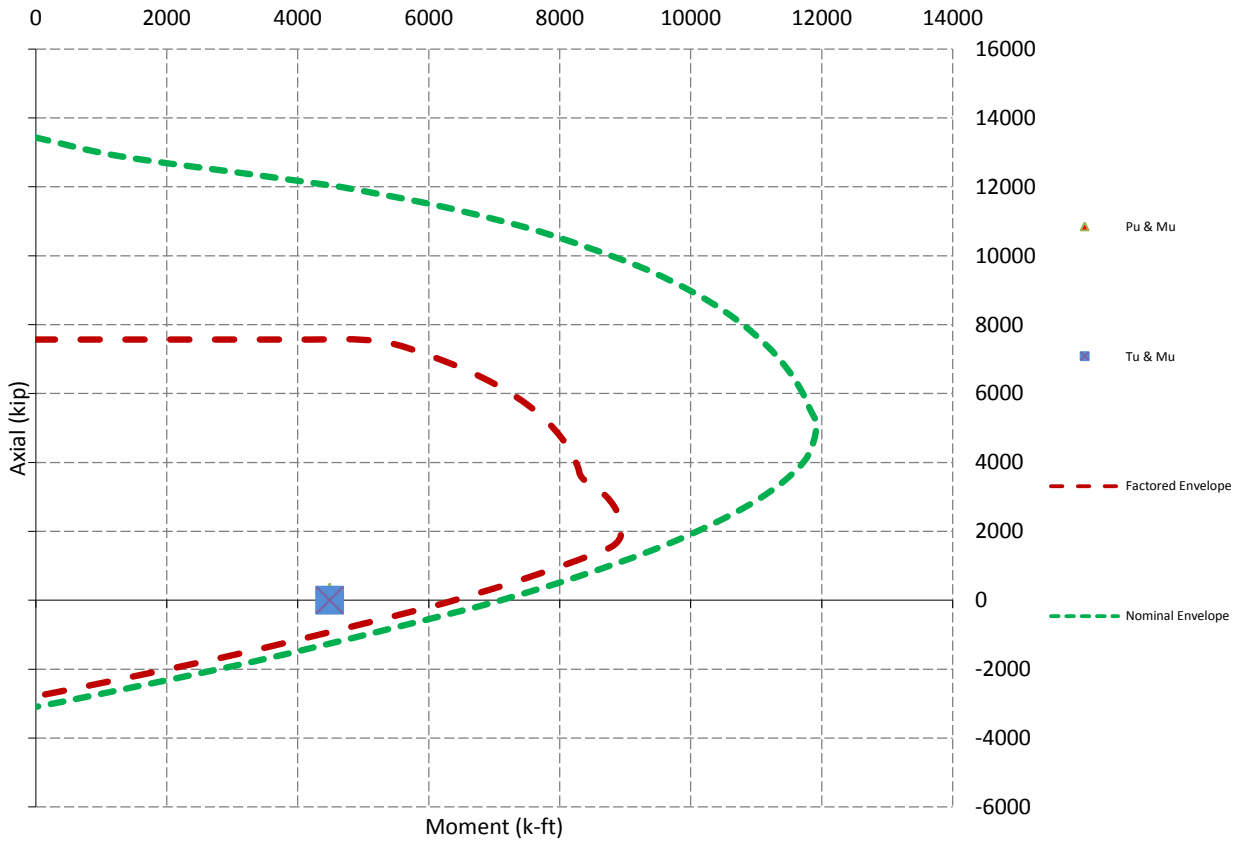
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads





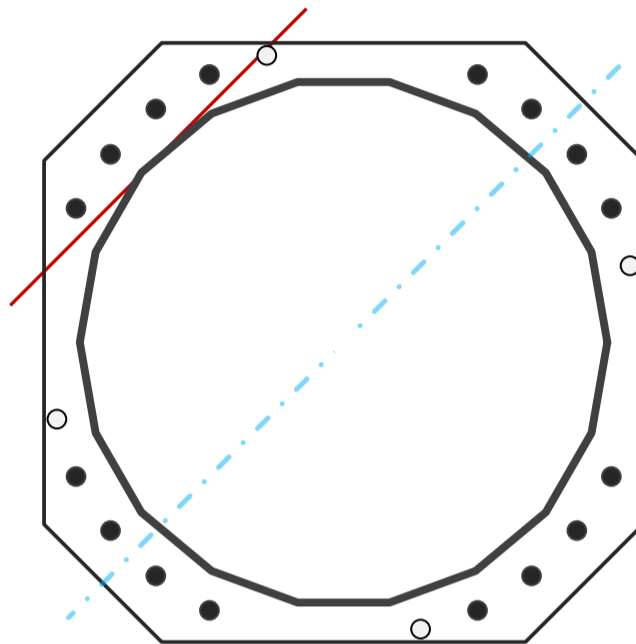
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	48.62	in
Thickness	0.500	in
Orientation Offset	0	°

Base Reactions			
Moment, Mu	4458.9	k-ft	
Axial, Pu	70.5	k	
Shear, Vu	37.9	k	
Neutral Axis	45	°	

Report Capacities		
Component	Capacity	Result
Base Plate	78%	Pass
Anchor Rods	69%	Pass
Dwyidag	56%	Pass

Base Plate		
Shape	Square	-
Width	56	in
Thickness	2 3/4	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	11	in
Orientation Offset	0	°
Anchor Rod Detail	c	$\eta=0.55$
Clear Distance	N/A	in
Applied Moment, Mu	2039.4	k
Bending Stress, ϕMn	2601.3	k



Dwyidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ϕ	2.5	in
Bracket Type	Angle	-
Circle	55.50	in
Orientation Offset	15	°
Applied Force, Pu	219.7	k
Dwyidag Bar, ϕPn	392.7	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, ϕ	2 1/4	in
Bolt Circle	56	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	179.4	k
Anchor Rods, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	37.9	3308.8	0.74
Anchor Rod Forces	37.9	3308.8	0.74
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1150.1	0.26
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	75.2036	4.1780	0.3500		21773.35
Bolt	3.9761	3.2477	0.8393	4.5	20382.94
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		7567.74
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	56	in
Thickness, t	2.75	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	27.787	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	56	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	179.4	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.690	OK
Interaction Capacity	0.690	OK

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

External Base Plate		
Chord Length AA	30.576	in
Additional AA	0.000	in
Section Modulus, Z	57.808	in ³
Applied Moment, Mu	2039.4	k-ft
Bending Capacity, φMn	2601.3	k-ft
Capacity, Mu/φMn	0.784	OK

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

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

Chord Length AB	29.826	in
Additional AB	0.000	in
Section Modulus, Z	56.390	in ³
Applied Moment, Mu	1776.4	k-ft
Bending Capacity, φMn	2537.5	k-ft
Capacity, Mu/φMn	0.700	OK

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

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

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	55.5	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	219.7	k
Compressive Capacity, φPn	392.7	k
Capacity, Pu/φPn	0.559	OK

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

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

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