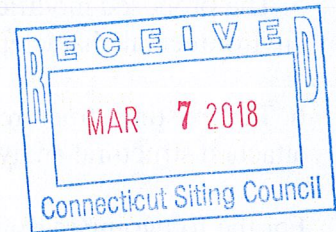


Aaron Meyers, Site Acquisition  
c/o New Cingular Wireless, PCS LLC (AT&T)  
Centerline Communications, LLC  
95 Ryan Drive, Suite 1  
Raynham, MA 02767  
Mobile: (774) 420-4202  
[ameyers@clinellc.com](mailto:ameyers@clinellc.com)

DATE March 6, 2018

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

EM-CING-060-180307



**RE: Notice of Exempt Modification // Site Number: CT2017  
10 Tanner Marsh Road, Guilford, CT 06437 (Site Name: Guilford)  
N 41.288694 // W 72.658249**

ORIGINAL

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 166-foot level of the existing 190.6-foot Self Support tower at 10 Tanner Marsh Rd., Guilford, CT 06437. The tower is owned by American Tower Corp. The property is owned by the Town of Guilford. AT&T now intends to swap six (3) RRUS for its LTE upgrade. These RRUS would be installed at the 166-foot level of the tower.

The current proposal involves a RRU swap only (3)

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Matthew T. Hoey III, First Selectman of Guilford, CT, as well as the tower owner, American Tower and the ground owner, Anna Dwyer, Town Clerk of Guilford, CT.

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

Attached to accommodate this filing are construction drawings dated March 1, 2018 by Hudson Design Group, LLC, a structural analysis dated January 4, 2018 by American Tower Corp. and an Emissions Analysis Report dated February 28, 2018 by Centerline Communications, LLC.

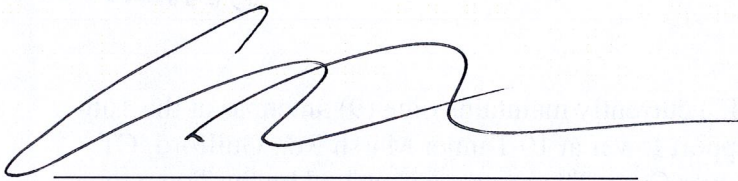
1. The proposed modifications will not result in an increase in the height of the existing structure.



2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis by Paul J. Ford & Company, dated August 11, 2017.

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

Sincerely,



---

Aaron Meyers, Site Acquisition  
c/o New Cingular Wireless, PCS LLC (AT&T)  
Centerline Communications, LLC  
95 Ryan Drive, Suite 1  
Raynham, MA 02767  
Mobile: (774) 420-4202  
[ameyers@centerlincommunications.com](mailto:ameyers@centerlincommunications.com)

#### Attachments

cc: Matthew T. Hoey III, First Selectman - as elected official  
American Tower Corp. - as tower owner  
Anna Dwyer, Town Clerk - as property owner  
George Kral - as Town Planner





# Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2017

FA#: 10034980

Guilford

10 Tanner Marsh Road

Guilford, CT 6437

**February 28, 2018**

**Centerline Communications Project Number: 950012-037**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>64.55 %</b>





February 28, 2018

AT&T Mobility – New England  
Attn: John Benedetto, RF Manager  
550 Cochituate Road  
Suite 550 – 13&14  
Framingham, MA 06040

### Emissions Analysis for Site: **CT2017 – Guilford**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **10 Tanner Marsh Road, Guilford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 700 and 850 MHz Bands are approximately  $467 \mu\text{W}/\text{cm}^2$  and  $567 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.





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

Additional details can be found in FCC OET 65.





## CALCULATIONS

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

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	700 MHz	2	30
LTE	1900 MHz (PCS)	4	40
LTE	2300 MHz (WCS)	4	30
LTE	850 MHz	2	40
UMTS	850 MHz	1	30

*Table 1: Channel Data Table*





The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	CCI OPA-65R-LCUU-H4	166
A	2	Commscope SBNHH-1D65A	166
A	3	Powerwave 7770	166
B	1	CCI OPA-65R-LCUU-H4	166
B	2	Commscope SBNHH-1D65A	166
B	3	Powerwave 7770	166
C	1	CCI OPA-65R-LCUU-H4	166
C	2	Commscope SBNHH-1D65A	166
C	3	Powerwave 7770	166

*Table 2: Antenna Data*

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





## RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	CCI OPA-65R-LCUU-H4	700 MHz / 1900 MHz (PCS)	10.55 / 13.55	6	240	4,531.44	0.78
Antenna A2	Commscope SBNHH-1D65A	2300 MHz (WCS) / 850 MHz	15.85 / 10.65	6	200	5,544.26	0.88
Antenna A3	Powerwave 7770	850 MHz	11.4	1	30	414.12	0.10
Sector A Composite MPE%							<b>1.76</b>
Antenna B1	CCI OPA-65R-LCUU-H4	700 MHz / 1900 MHz (PCS)	10.55 / 13.55	6	240	4,531.44	0.78
Antenna B2	Commscope SBNHH-1D65A	2300 MHz (WCS) / 850 MHz	15.85 / 10.65	6	200	5,544.26	0.88
Antenna B3	Powerwave 7770	850 MHz	11.4	1	30	414.12	0.10
Sector B Composite MPE%							<b>1.76</b>
Antenna C1	CCI OPA-65R-LCUU-H4	700 MHz / 1900 MHz (PCS)	10.55 / 13.55	6	240	4,531.44	0.78
Antenna C2	Commscope SBNHH-1D65A	2300 MHz (WCS) / 850 MHz	15.85 / 10.65	6	200	5,544.26	0.88
Antenna C3	Powerwave 7770	850 MHz	11.4	1	30	414.12	0.10
Sector C Composite MPE%							<b>1.76</b>

*Table 3: AT&T Emissions Levels*





The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	<b>1.76 %</b>
MetroPCS	0.26 %
Town of Guilford	8.71 %
USA Mobility	0.28 %
WGRS-Town of Monroe	7.18 %
WMNR	44.95 %
Enertrac	0.00 %
T-Mobile	1.41 %
<b>Site Total MPE %:</b>	<b>64.55 %</b>

*Table 4: All Carrier MPE Contributions*

AT&T Sector A Total:	1.76 %
AT&T Sector B Total:	1.76 %
AT&T Sector C Total:	1.76 %
<b>Site Total:</b>	
	<b>64.55 %</b>

*Table 5: Site MPE Summary*





FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
AT&T 700 MHz LTE (Antenna 1)	2	454.00	166	1.28	700 MHz	467	0.27%
AT&T 1900 MHz (PCS) LTE (Antenna 1)	4	905.86	166	5.09	1900 MHz (PCS)	1000	0.51%
AT&T 2300 MHz (WCS) LTE (Antenna 2)	4	1,153.78	166	6.48	2300 MHz (WCS)	1000	0.65%
AT&T 850 MHz LTE (Antenna 2)	2	464.58	166	1.30	850 MHz	567	0.23%
AT&T 850 MHz UMTS (Antenna 3)	1	414.12	166	0.58	850 MHz	567	0.10%
						<b>Total:</b>	<b>1.76 %</b>

*Table 6: AT&T Maximum Sector MPE Power Values*





## Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	1.76 %
Sector B:	1.76 %
Sector C:	1.76 %
AT&T Maximum Total (per sector):	1.76 %
Site Total:	64.55 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **64.55 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the printed name.

Scott Heffernan  
RF Engineering Director  
**Centerline Communications, LLC**  
95 Ryan Drive, Suite 1  
Raynham, MA 02767





**AMERICAN TOWER®**  
CORPORATION

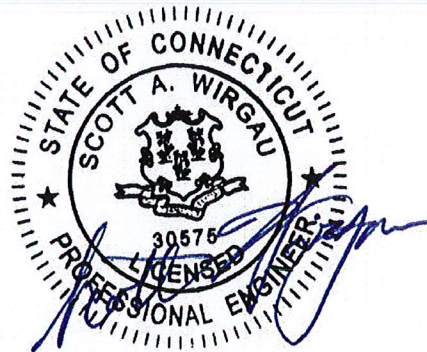
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## Structural Analysis Report

**Structure** : 190.6 ft Self Supported Tower  
**ATC Site Name** : Glfd-Guilford Rebuild CT, CT  
**ATC Site Number** : 311305  
**Engineering Number** : OAA719816\_C3\_01  
**Proposed Carrier** : AT&T Mobility  
**Carrier Site Name** : Guilford  
**Carrier Site Number** : CT2017  
**Site Location** : 10 Tanner Marsh Road  
Guilford, CT 06437-2942  
41.288600,-72.658300  
**County** : New Haven  
**Date** : January 4, 2018  
**Max Usage** : 90%  
**Result** : Pass

Prepared By:  
Aaron Black  
Structural Engineer I

Reviewed By:



Jan 4 2018 4:49 PM

COA: PEC.0001553





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Calculations .....	Attached





## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 190.6 ft self supported tower to reflect the change in loading by AT&T Mobility.

## Supporting Documents

<b>Tower Drawings</b>	Nello Job #RFQ34841, dated April 8, 2011 Inspection by A.R. Wireless, dated August 24, 2013
<b>Foundation Drawing</b>	ATC Job #47517572B, dated June 15, 2011
<b>Geotechnical Report</b>	GEOServices Project #21-07254, dated March 11, 2008

## 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.

<b>Basic Wind Speed:</b>	101 mph (3-Second Gust, $V_{ASD}$ ) / 130 mph (3-Second Gust, $V_{ULT}$ )
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	C
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.17$ , $S_1 = 0.06$
<b>Site Class:</b>	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](mailto: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 <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
189.0	190.0	2	6' Omni	Leg	(2) 1/2" Coax	Other
187.0	190.0	3	12' Dipole	Leg	(3) 7/8" Coax	Town Of Guilford CT
183.0	183.0	3	RCU (Remote Control Unit)	Side Arms	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
		3	RFS APXV18-206517S-C			
175.0	175.0	3	Andrew LNX-6515DS-VTM	Sector Frames	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21 B4A B2P			
		3	Ericsson AIR 21, 1.3 M, B2A B4P, AWS - 1700/2100			
		3	Ericsson KRY 112 144/1			
166.0	166.0	3	CCI OPA-65R-LCUU-H4 (14.4" width)	Sector Frames	(12) 1 5/8" Coax (6) 3/8" RET Control Cable (2) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 0.74" 8 AWG 7 (1) 1/2" Coax	AT&T Mobility
		3	Powerwave 7770.00			
		3	Ericsson RRUS 32 B30 (60 lbs)			
		6	Powerwave LGP21401			
		6	Powerwave 7020			
		3	Commscope SBNHH-1D65A			
		3	Ericsson RRUS-11 (19.7")			
		2	Raycap DC6-48-60-18-8F			
135.0	140.0	1	10' Dipole	Side Arms	(4) 7/8" Coax (3) 1 1/4" Coax	Town Of Guilford CT
	135.0	4	4' Dish w/ Radome			
125.0	137.0	2	6' FM antenna	Side Arms	(2) 7/8" Coax (1) 1 5/8" Coax	Monroe Board Of Education
	127.0	1	Harris FML-4E			
	125.0	1	Scala PR-950			
87.0	91.0	1	Antel BCD-87010 ___ 4°	Stand-Off	(1) 1 5/8" Coax	Spok Holdings
80.0	80.0	2	4' Dish w/ Radome	Leg	(2) 7/8" Coax	Town Of Guilford CT
17.0	-	-	-	-	(2) 0.28" RG-6	Spok Holdings
16.0	16.0	1	Channel Master Type 120	Leg	-	

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
166.0	166.0	3	Ericsson RRUS-12 B2	-	-	AT&T Mobility
		3	Ericsson RRUS A2 B2			
		6	Powerwave LGP21901			

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
166.0	166.0	3	Ericsson RRUS 32 B2	Sector Frames	(1) 2" conduit	AT&T Mobility

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

Install proposed coax alongside existing AT&T Mobility coax.





**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Legs	78%	Pass
Diagonals	90%	Pass
Horizontals	8%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	434.0	585.9	408.3	70%
Axial (Kips)	488.3	659.2	457.7	69%
Shear (Kips)	49.5	66.8	45.0	67%

\* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

**Deflection, Twist and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
166.0	Ericsson RRUS 32 B2	AT&T Mobility	0.353	0.030	0.245
135.0	4' Dish w/ Radome	Town Of Guilford CT	0.228		0.190
125.0	Scala PR-950	Monroe Board Of Education	0.207	0.029	0.193
80.0	4' Dish w/ Radome	Town Of Guilford CT	0.084	0.013	0.119
16.0	Channel Master Type 120	Spok Holdings, Inc.	0.004	0.002	0.024

\*Deflection, Twist 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.

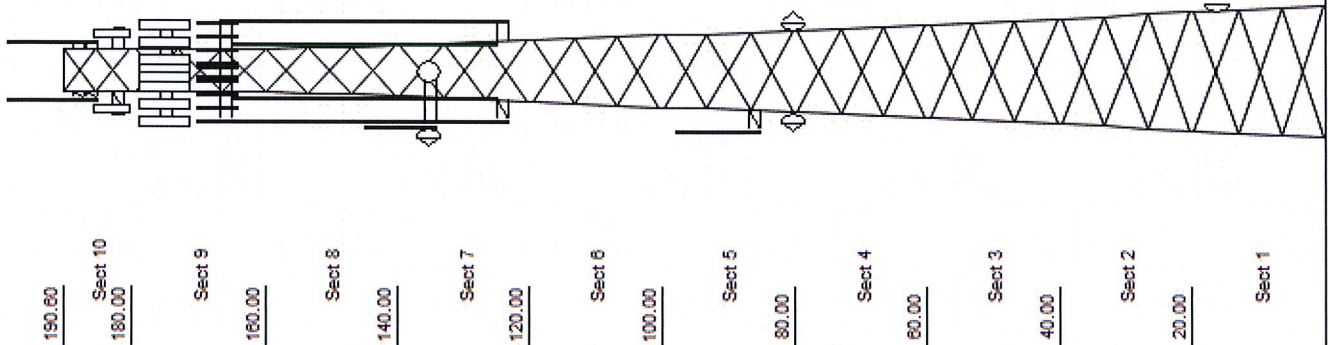
All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information		
Tower : 311305	Location : GLFD-GUILFORD	Base Width : 20.00 ft
Client : AT&T MOBILITY		Top Width : 6.50 ft
Code : ANSI/TIA-222-G		Tower Ht : 190.60 ft
		Shape : Triangle

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Loads: 101 mph no ice  
 50 mph w/ 3/4" radial ice  
 Site Class: D Ss: 0.17 S1: 0.06  
 60 mph Serviceability



Sections Properties			
Section	Leg Members	Diagonal Members	Horizontal Members
1	PST 50 ksi 12" DIA PIPE	SAE 50 ksi 4X4X0.25	
2	PST 50 ksi 10" DIA PIPE	SAE 50 ksi 3.5X3.5X0.25	
3 - 4	PST 50 ksi 10" DIA PIPE	SAE 50 ksi 3X3X0.25	
5 - 6	PST 50 ksi 8" DIA PIPE	SAE 50 ksi 3X3X0.1875	
7	PST 50 ksi 6" DIA PIPE	SAE 50 ksi 3X3X0.1875	
8	PST 50 ksi 5" DIA PIPE	SAE 50 ksi 2.5X2.5X0.1875	
9	PST 50 ksi 3" DIA PIPE	SAE 50 ksi 2.5X2.5X0.1875	
10	PST 50 ksi 2" DIA PIPE	SAE 50 ksi 2X2X0.1875	SAE 36 ksi 2X2X0.125

Discrete Appurtenance		
Elev (ft)	Type	Qty Description
189.00	Whip	2 6' Omni
187.00	Whip	3 12' Dipole
183.00	Panel	3 RCU (Remote Control Unit)
183.00	Panel	3 RFS APXV18-206517S-C
183.00	Straight Arm	3 Round Side Arm
175.00	Panel	3 Andrew LNX-6519DS-VTM
175.00	Panel	3 Ericsson RRUS 11 B12
175.00	Panel	3 Ericsson AIR 21 B4A B2P
175.00	Panel	3 Ericsson AIR 21, 1.3 M, B2A B4
175.00	Panel	3 Ericsson KRY 112 144/1
175.00	Mounting Frame	3 Flat Light Sector Frame
166.00	Panel	3 Commscope SBHH-1D65A
166.00	Mounting Frame	3 Flat Light Sector Frame
166.00	Panel	3 CCI OPA-65R-LCUU-H4 (14.4" wid
166.00	Panel	3 Powerwave Aligon 7770.00
166.00	Panel	3 Ericsson RRUS-11 (19.7")
166.00	Panel	3 Ericsson RRUS 32 B2
166.00	Panel	3 Ericsson RRUS 32 B30 (60 lbs)
166.00	Panel	2 Raycap DC6-48-60-18-8F
166.00	Panel	6 Powerwave Aligon LGP21401
166.00	Mounting Frame	1 Round Sector Frame
135.00	Dish	4 4' Dish w/ Radome
135.00	Straight Arm	4 Round Side Arm
135.00	Whip	1 10' Dipole
125.00	Whip	2 Round Side Arm
125.00	Whip	1 Harris FML-4E
125.00	Whip	2 6' FM antenna
125.00	Dish	1 Scala PR-950
87.00	Whip	1 Antel BCD-87010 ___ 4°
87.00	Straight Arm	1 Stand-Off
80.00	Dish	2 4' Dish w/ Radome
16.00	Dish	1 ChannelMaster Tvne.120

Linear Appurtenance			
Elev (ft)	From	To	Qty Description
0.00	190.50	1	Climbing Ladder
0.00	189.00	2	1/2" Coax
0.00	187.00	3	7/8" Coax
0.00	183.00	1	Waveguide
0.00	183.00	1	3/8" Coax
0.00	183.00	6	1 1/8" Coax



Job Information	
Tower : 311305	Location : GLFD-GUILFORD Base Width : 20.00 ft
Client : AT&T MOBILITY	Top Width : 6.50 ft
Code : ANSI/TIA-222-G	Tower Ht : 190.60 ft
	Shape : Triangle

0.00	175.00	1	Waveguide
0.00	175.00	12	1 5/8" Coax
0.00	175.00	1	1 1/4" Hybriflex Cab
0.00	166.00	1	Waveguide
0.00	166.00	6	3/8" (9.5mm)
0.00	166.00	1	2" conduit
0.00	166.00	1	1/2" Coax
0.00	166.00	12	1 5/8" Coax
0.00	166.00	2	0.78" (19.7mm) 8 AWG
0.00	166.00	2	0.74" (18.7mm) 8 AWG
0.00	166.00	1	0.39" (10mm) Fiber T
0.00	166.00	1	0.39" (10mm) Fiber T
0.00	135.00	4	7/8" Coax
0.00	135.00	3	1 1/4" Coax
0.00	125.00	2	7/8" Coax
0.00	125.00	1	1 5/8" Coax
0.00	87.00	1	1 5/8" Coax
0.00	80.00	2	7/8" Coax
0.00	17.00	2	0.28" (7mm) RG-6

Global Base Foundation Design Loads			
Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	7,610.33	54.81	75.06
DL + WL + IL	2,098.97	144.43	20.34

Individual Base Foundation Design Loads		
Vertical (kip)	Uplift (kip)	Horizontal (kip)
457.65	408.27	45.01



Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Analysis Parameters

Location:	NEW HAVEN County, CT	Height (ft):	190.5999
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	20.00
Tower Manufacturer:	Nello Corp	Top Face Width (ft):	6.50
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:			
Ke:			

### Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	101 mph
Exposure Category:	C	Design Windspeed With Ice:	50 mph
Topographic Category:	1	Operational Windspeed:	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):	0.85		
T <sub>L</sub> (sec):	6	p:	1.3
S <sub>s</sub> :	0.173	S <sub>1</sub> :	0.060
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.185	S <sub>d1</sub> :	0.096
		C <sub>s</sub> :	0.038
		C <sub>s, Max</sub> :	0.038
		C <sub>s, Min</sub> :	0.030

### Load Cases

1.2D + 1.6W Normal	101 mph Normal with No Ice
1.2D + 1.6W 60 deg	101 mph 60 degree with No Ice
1.2D + 1.6W 90 deg	101 mph 90 degree with No Ice
1.2D + 1.6W 120 deg	101 mph 120 degree with No Ice
1.2D + 1.6W 180 deg	101 mph 180 degree with No Ice
1.2D + 1.6W 210 deg	101 mph 210 degree with No Ice
1.2D + 1.6W 240 deg	101 mph 240 degree with No Ice
1.2D + 1.6W 300 deg	101 mph 300 degree with No Ice
1.2D + 1.6W 330 deg	101 mph 330 degree with No Ice
0.9D + 1.6W Normal	101 mph Normal with No Ice (Reduced DL)
0.9D + 1.6W 60 deg	101 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	101 mph 90 deg with No Ice (Reduced DL)
0.9D + 1.6W 120 deg	101 mph 120 deg with No Ice (Reduced DL)
0.9D + 1.6W 180 deg	101 mph 180 deg with No Ice (Reduced DL)
0.9D + 1.6W 210 deg	101 mph 210 deg with No Ice (Reduced DL)
0.9D + 1.6W 240 deg	101 mph 240 deg with No Ice (Reduced DL)
0.9D + 1.6W 300 deg	101 mph 300 deg with No Ice (Reduced DL)
0.9D + 1.6W 330 deg	101 mph 330 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 0.75 in Radial Ice



Site Number: 311305

Code:

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Analysis Parameters

1.2D + 1.0Di + 1.0Wi 60 deg	50 mph 60 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	50 mph 90 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 120 deg	50 mph 120 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	50 mph 180 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 210 deg	50 mph 210 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 240 deg	50 mph 240 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 300 deg	50 mph 300 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 330 deg	50 mph 330 deg with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E Normal	Seismic Normal
(1.2 + 0.2Sds) * DL + E 60 deg	Seismic 60 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(1.2 + 0.2Sds) * DL + E 120 deg	Seismic 120 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 210 deg	Seismic 210 deg
(1.2 + 0.2Sds) * DL + E 240 deg	Seismic 240 deg
(1.2 + 0.2Sds) * DL + E 300 deg	Seismic 300 deg
(1.2 + 0.2Sds) * DL + E 330 deg	Seismic 330 deg
(0.9 - 0.2Sds) * DL + E Normal	Seismic (Reduced DL) Normal
(0.9 - 0.2Sds) * DL + E 60 deg	Seismic (Reduced DL) 60 deg
(0.9 - 0.2Sds) * DL + E 90 deg	Seismic (Reduced DL) 90 deg
(0.9 - 0.2Sds) * DL + E 120 deg	Seismic (Reduced DL) 120 deg
(0.9 - 0.2Sds) * DL + E 180 deg	Seismic (Reduced DL) 180 deg
(0.9 - 0.2Sds) * DL + E 210 deg	Seismic (Reduced DL) 210 deg
(0.9 - 0.2Sds) * DL + E 240 deg	Seismic (Reduced DL) 240 deg
(0.9 - 0.2Sds) * DL + E 300 deg	Seismic (Reduced DL) 300 deg
(0.9 - 0.2Sds) * DL + E 330 deg	Seismic (Reduced DL) 330 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 120 deg	Serviceability - 60 mph Wind 120 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 210 deg	Serviceability - 60 mph Wind 210 deg
1.0D + 1.0W Service 240 deg	Serviceability - 60 mph Wind 240 deg
1.0D + 1.0W Service 300 deg	Serviceability - 60 mph Wind 300 deg
1.0D + 1.0W Service 330 deg	Serviceability - 60 mph Wind 330 deg



Site Number: 311305

Code:

ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Tower Loading

#### Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
189.0	6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	1.0	153.9	32.16	154	60
187.0	12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	3.0	1775.2	32.16	592	144
183.0	RCU (Remote)	3	1	0.2	0.7	2.0	2.0	0.80	0.50	0.0	0.0	31.90	8	4
183.0	RFS APXV18-	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.0	31.90	366	95
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	31.90	454	540
175.0	Andrew LNX-	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	31.61	825	185
175.0	Ericsson AIR 21 B4A	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	31.61	425	324
175.0	Ericsson AIR 21, 1.3	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	31.61	425	324
175.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	31.61	21	40
175.0	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.67	0.0	0.0	31.61	193	183
175.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	31.61	1298	1440
166.0	CCI OPA-65R-LCUU-	3	57	5.9	4.0	14.4	7.3	0.80	0.66	1.0	400.5	31.30	400	205
166.0	Commscope SBNHH-	3	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	31.26	414	121
166.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.0	31.26	187	191
166.0	Ericsson RRUS 32	3	60	2.7	2.2	12.1	6.7	0.80	0.67	1.0	184.1	31.30	184	216
166.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.0	31.26	191	184
166.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	31.26	1147	1440
166.0	Powerwave Allgon	6	2	0.4	0.4	8.3	2.4	0.80	0.50	1.0	40.9	31.30	41	16
166.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	1.0	365.9	31.30	366	126
166.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	112.4	31.30	112	102
166.0	Raycap DC6-48-60-	2	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	31.26	75	48
135.0	10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	5.0	771.0	30.16	154	36
135.0	4' Dish w/ Radome	4	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	29.93	1766	576
135.0	Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.93	586	360
135.0	Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.93	847	720
125.0	6' FM antenna	2	30	13.4	6.0	6.0	6.0	1.00	1.00	12.0	13178.3	30.02	1098	72
125.0	Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	2.0	1031.0	29.54	515	272
125.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.44	416	360
125.0	Scala PR-950	1	38	10.1	5.7	36.0	36.0	1.00	1.00	0.0	0.0	29.44	404	46
87.00	Antel BCD-87010	1	27	2.9	11.2	2.6	2.6	1.00	1.00	4.0	434.5	27.54	109	32
87.00	Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.28	93	90
80.00	4' Dish w/ Radome	2	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	26.80	791	288
16.00	Channel Master	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.0	19.10	524	151
<b>Totals</b>		<b>88</b>	<b>7490</b>	<b>512.5</b>									<b>15183</b>	<b>8988</b>

#### Discrete Appurtenance Properties 0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
189.0	6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	1.0	153.9	32.16	154	45
187.0	12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	3.0	1775.2	32.16	592	108
183.0	RCU (Remote)	3	1	0.2	0.7	2.0	2.0	0.80	0.50	0.0	0.0	31.90	8	3
183.0	RFS APXV18-	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.0	31.90	366	71
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	31.90	454	405
175.0	Andrew LNX-	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	31.61	825	139
175.0	Ericsson AIR 21 B4A	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	31.61	425	243
175.0	Ericsson AIR 21, 1.3	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	31.61	425	243
175.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	31.61	21	30
175.0	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.67	0.0	0.0	31.61	193	137
175.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	31.61	1298	1080
166.0	CCI OPA-65R-LCUU-	3	57	5.9	4.0	14.4	7.3	0.80	0.66	1.0	400.5	31.30	400	154
166.0	Commscope SBNHH-	3	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	31.26	414	90



Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

**Tower Loading**

166.0 Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.0	31.26	187	143
166.0 Ericsson RRUS 32	3	60	2.7	2.2	12.1	6.7	0.80	0.67	1.0	184.1	31.30	184	162
166.0 Ericsson RRUS-11	3	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.0	31.26	191	138
166.0 Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	31.26	1147	1080
166.0 Powerwave Allgon	6	2	0.4	0.4	8.3	2.4	0.80	0.50	1.0	40.9	31.30	41	12
166.0 Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	1.0	365.9	31.30	366	95
166.0 Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	112.4	31.30	112	76
166.0 Raycap DC6-48-60-	2	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	31.26	75	36
135.0 10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	5.0	771.0	30.16	154	27
135.0 4' Dish w/ Radome	4	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	29.93	1766	432
135.0 Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.93	586	270
135.0 Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.93	847	540
125.0 6' FM antenna	2	30	13.4	6.0	6.0	6.0	1.00	1.00	12.0	13178.3	30.02	1098	54
125.0 Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	2.0	1031.0	29.54	515	204
125.0 Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	29.44	416	270
125.0 Scala PR-950	1	38	10.1	5.7	36.0	36.0	1.00	1.00	0.0	0.0	29.44	404	34
87.00 Antel BCD-87010	1	27	2.9	11.2	2.6	2.6	1.00	1.00	4.0	434.5	27.54	109	24
87.00 Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.28	93	68
80.00 4' Dish w/ Radome	2	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	26.80	791	216
16.00 Channel Master	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.0	19.10	524	113
<b>Totals</b>	<b>88</b>	<b>7490</b>	<b>512.5</b>									<b>15183</b>	<b>6741</b>

**Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi**

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
189.0	6' Omni	2	43	3.0	6.0	3.0	3.0	1.00	1.00	1.0	40.4	7.88	40	96
187.0	12' Dipole	3	192	11.9	12.0	3.0	3.0	1.00	1.00	3.0	715.1	7.88	238	600
183.0	RCU (Remote)	3	7	0.6	0.7	2.0	2.0	0.80	0.50	0.0	0.0	7.82	4	21
183.0	RFS APXV18-	3	121	7.6	6.0	6.8	3.2	0.80	0.68	0.0	0.0	7.82	82	380
183.0	Round Side Arm	3	225	8.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	7.82	107	765
175.0	Andrew LNX-	3	319	13.1	8.0	11.9	7.1	0.80	0.70	0.0	0.0	7.75	145	987
175.0	Ericsson AIR 21 B4A	3	233	7.9	4.5	12.0	8.0	0.80	0.71	0.0	0.0	7.75	89	754
175.0	Ericsson AIR 21, 1.3	3	233	7.9	4.5	12.0	8.0	0.80	0.71	0.0	0.0	7.75	89	754
175.0	Ericsson KRY 112	3	22	0.9	0.6	6.1	2.7	0.80	0.50	0.0	0.0	7.75	7	72
175.0	Ericsson RRUS 11	3	138	3.5	1.6	17.0	7.2	0.80	0.67	0.0	0.0	7.75	37	446
175.0	Flat Light Sector	3	705	33.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	7.75	369	2356
166.0	CCI OPA-65R-LCUU-	3	218	7.0	4.0	14.4	7.3	0.80	0.66	1.0	72.1	7.67	72	688
166.0	Commscope SBNHH-	3	194	7.0	4.6	11.9	7.1	0.80	0.69	0.0	0.0	7.66	75	603
166.0	Ericsson RRUS 32 B2	3	142	3.5	2.3	12.1	7.0	0.80	0.67	0.0	0.0	7.66	36	459
166.0	Ericsson RRUS 32	3	147	3.4	2.2	12.1	6.7	0.80	0.67	1.0	35.9	7.67	36	476
166.0	Ericsson RRUS-11	3	128	3.9	1.6	17.0	8.0	0.80	0.67	0.0	0.0	7.66	41	415
166.0	Flat Light Sector	3	705	33.2	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.66	326	2356
166.0	Powerwave Allgon	6	13	0.9	0.4	8.3	2.4	0.80	0.50	1.0	13.9	7.67	14	78
166.0	Powerwave Allgon	3	172	6.6	4.6	11.0	5.0	0.80	0.65	1.0	66.9	7.67	67	538
166.0	Powerwave Allgon	6	34	2.9	1.2	9.2	2.6	0.80	0.50	1.0	45.1	7.67	45	221
166.0	Raycap DC6-48-60-	2	73	1.7	2.0	9.7	9.7	0.80	1.00	0.0	0.0	7.66	18	155
135.0	10' Dipole	1	141	8.6	10.0	3.0	3.0	1.00	1.00	5.0	269.3	7.39	54	147
135.0	4' Dish w/ Radome	4	435	12.4	4.0	48.0	0.0	1.00	1.00	0.0	0.0	7.33	310	1837
135.0	Round Sector Frame	1	663	30.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.33	192	723
135.0	Round Side Arm	4	222	7.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.33	197	1009
125.0	6' FM antenna	2	51	22.7	6.0	6.0	6.0	1.00	1.00	12.0	3407.6	7.36	284	113
125.0	Harris FML-4E	1	383	21.7	40.0	24.0	24.0	1.00	1.00	2.0	266.6	7.24	133	429
125.0	Round Side Arm	2	222	7.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.22	97	505
125.0	Scala PR-950	1	64	17.0	5.7	36.0	36.0	1.00	1.00	0.0	0.0	7.22	104	72
87.00	Antel BCD-87010	1	153	6.5	11.2	2.6	2.6	1.00	1.00	4.0	150.2	6.75	38	158



Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Tower Loading

87.00 Stand-Off	1	125	4.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.69	24	140
80.00 4' Dish w/ Radome	2	416	12.3	4.0	48.0	0.0	1.00	1.00	0.0	0.0	6.57	138	881
16.00 Channel Master	1	283	22.5	3.9	47.2	0.0	1.00	1.00	0.0	0.0	4.68	89	308
<b>Totals</b>	<b>88</b>	<b>18043</b>	<b>787.6</b>									<b>3597</b>	<b>19541</b>

### Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
189.0	6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	1.0	34.0	11.35	34	50
187.0	12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	3.0	391.6	11.35	131	120
183.0	RCU (Remote)	3	1	0.2	0.7	2.0	2.0	0.80	0.50	0.0	0.0	11.26	2	3
183.0	RFS APXV18-	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.0	11.26	81	79
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	11.26	100	450
175.0	Andrew LNX-	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	11.15	182	154
175.0	Ericsson AIR 21 B4A	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	11.15	94	270
175.0	Ericsson AIR 21, 1.3	3	90	5.8	4.5	12.0	8.0	0.80	0.71	0.0	0.0	11.15	94	270
175.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	11.15	5	33
175.0	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.67	0.0	0.0	11.15	43	152
175.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	11.15	286	1200
166.0	CCI OPA-65R-LCUU-	3	57	5.9	4.0	14.4	7.3	0.80	0.66	1.0	88.3	11.04	88	171
166.0	Commscope SBNHH-	3	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	11.03	91	101
166.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.0	11.03	41	159
166.0	Ericsson RRUS 32	3	60	2.7	2.2	12.1	6.7	0.80	0.67	1.0	40.6	11.04	41	180
166.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.0	11.03	42	153
166.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.03	253	1200
166.0	Powerwave Allgon	6	2	0.4	0.4	8.3	2.4	0.80	0.50	1.0	9.0	11.04	9	13
166.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	1.0	80.7	11.04	81	105
166.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	24.8	11.04	25	85
166.0	Raycap DC6-48-60-	2	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	11.03	17	40
135.0	10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	5.0	170.1	10.64	34	30
135.0	4' Dish w/ Radome	4	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	10.56	390	480
135.0	Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.56	129	300
135.0	Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.56	187	600
125.0	6' FM antenna	2	30	13.4	6.0	6.0	6.0	1.00	1.00	12.0	2906.7	10.59	242	60
125.0	Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	2.0	227.4	10.43	114	227
125.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.39	92	300
125.0	Scala PR-950	1	38	10.1	5.7	36.0	36.0	1.00	1.00	0.0	0.0	10.39	89	38
87.00	Antel BCD-87010	1	27	2.9	11.2	2.6	2.6	1.00	1.00	4.0	95.8	9.72	24	27
87.00	Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	9.63	20	75
80.00	4' Dish w/ Radome	2	120	10.9	4.0	48.0	0.0	1.00	1.00	0.0	0.0	9.46	174	240
16.00	Channel Master	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.0	6.74	116	126
<b>Totals</b>		<b>88</b>	<b>7490</b>	<b>512.5</b>									<b>3349</b>	<b>7490</b>

Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Tower Loading

#### Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	190.5	Climbing Ladder	1	2.00	6.90	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	189.0	1/2" Coax	2	0.63	0.15	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	187.0	7/8" Coax	3	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	183.0	1 5/8" Coax	6	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
0.00	183.0	3/8" Coax	1	0.44	0.08	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	183.0	Waveguide	1	2.00	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	175.0	1 1/4" Hybriflex	1	1.54	1.00	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	175.0	1 5/8" Coax	12	1.98	0.82	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	175.0	Waveguide	1	2.00	6.00	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	166.0	0.39" (10mm) Fiber	1	0.39	0.06	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	166.0	0.39" (10mm) Fiber	1	0.39	0.06	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	166.0	0.74" (18.7mm) 8	2	0.74	0.49	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	166.0	0.78" (19.7mm) 8	2	0.78	0.59	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	166.0	1 5/8" Coax	12	1.98	0.82	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	166.0	1/2" Coax	1	0.63	0.15	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	166.0	2" conduit	1	2.38	3.65	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	166.0	3/8" (0.38")	6	0.38	0.23	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	166.0	Waveguide	1	2.00	6.00	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	135.0	1 1/4" Coax	3	1.55	0.63	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	135.0	7/8" Coax	4	1.09	0.33	75	3	Block	0.00	N	1.00	1.00	0.00
0.00	125.0	1 5/8" Coax	1	1.98	0.82	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	125.0	7/8" Coax	2	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	87.00	1 5/8" Coax	1	1.98	0.82	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	80.00	7/8" Coax	2	1.09	0.33	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	17.00	0.28" (7mm) RG-6	2	0.28	0.03	0	3	Individual	0.00	N	1.00	1.00	0.00



Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Equivalent Lateral Force Method

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

Spectral Response Acceleration for Short Period ( $S_g$ ):	0.17
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.06
Long-Period Transition Period ( $T_L$ - Seconds):	6
Importance Factor ( $I_g$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.04
Upper Limit $C_s$ :	0.04
Lower Limit $C_s$ :	0.03
Period based on Rayleigh Method (sec):	0.85
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.18
Total Unfactored Dead Load:	45.68 k
Seismic Base Shear (E):	2.23 k

#### LoadCase (1.2 + 0.2Sds) \* DL + E

#### Seismic

Section	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
10	185.30	506	235,668	0.026	58	626
9	170.00	1,741	732,859	0.080	179	2,153
8	150.00	2,604	946,222	0.104	231	3,221
7	130.00	3,106	953,849	0.105	233	3,842
6	110.00	3,803	959,353	0.105	235	4,704
5	90.00	3,895	775,963	0.085	190	4,818
4	70.00	5,040	747,014	0.082	183	6,234
3	50.00	5,182	517,000	0.057	126	6,410
2	30.00	5,640	308,496	0.034	75	6,976
1	10.00	6,672	100,198	0.011	24	8,253
6' Omni	189.00	50	23,847	0.003	6	62
12' Dipole	187.00	120	56,521	0.006	14	148
RCU (Remote Control Unit)	183.00	3	1,378	0.000	0	4
RFS APXV18-206517S-C	183.00	79	36,367	0.004	9	98
Round Side Arm	183.00	450	206,631	0.023	51	557
Andrew LNX-6515DS-VTM	175.00	154	67,047	0.007	16	190
Ericsson AIR 21 B4A B2P	175.00	270	117,627	0.013	29	334
Ericsson AIR 21, 1.3 M, B2A B4P, AWS - 1	175.00	270	117,627	0.013	29	334
Ericsson KRY 112 144/1	175.00	33	14,377	0.002	4	41
Ericsson RRUS 11 B12	175.00	152	66,263	0.007	16	188
Flat Light Sector Frame	175.00	1,200	522,785	0.057	128	1,484
CCI OPA-65R-LCUU-H4 (14.4" width)	166.00	171	70,010	0.008	17	212
Commscope SBNHH-1D65A	166.00	101	41,146	0.005	10	124

Site Number: 311305

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

**Equivalent Lateral Force Method**

Equipment	Weight (lb)	Height (ft)	Wz (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
Ericsson RRUS 32 B2	166.00	159	65,097	0.007	16	197
Ericsson RRUS 32 B30 (60 lbs)	166.00	180	73,695	0.008	18	223
Ericsson RRUS-11 (19.7")	166.00	153	62,640	0.007	15	189
Flat Light Sector Frame	166.00	1,200	491,297	0.054	120	1,484
Powerwave Allgon 7020	166.00	13	5,404	0.001	1	16
Powerwave Allgon 7770.00	166.00	105	42,988	0.005	11	130
Powerwave Allgon LGP21401	166.00	85	34,636	0.004	8	105
Raycap DC6-48-60-18-8F	166.00	40	16,377	0.002	4	49
10' Dipole	135.00	30	9,631	0.001	2	37
4' Dish w/ Radome	135.00	480	154,091	0.017	38	594
Round Sector Frame	135.00	300	96,307	0.011	24	371
Round Side Arm	135.00	600	192,613	0.021	47	742
6' FM antenna	125.00	60	17,594	0.002	4	74
Harris FML-4E	125.00	227	66,563	0.007	16	281
Round Side Arm	125.00	300	87,969	0.010	22	371
Scala PR-950	125.00	38	11,143	0.001	3	47
Antel BCD-87010 ___ 4°	87.00	26	5,073	0.001	1	33
Stand-Off	87.00	75	14,358	0.002	4	93
4' Dish w/ Radome	80.00	240	41,627	0.005	10	297
Channel Master Type 120	16.00	126	3,289	0.000	1	156
<b>TOTAL</b>		<b>45,678</b>	<b>9,110,638</b>	<b>1.000</b>	<b>2,227</b>	<b>56,499</b>

**LoadCase (0.9 - 0.2Sds) \* DL + E**

**Seismic (Reduced DL)**

Section	Height Above Base (ft)	Weight (lb)	Wz (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
10	185.30	506	235,668	0.026	58	437
9	170.00	1,741	732,859	0.080	179	1,502
8	150.00	2,604	946,222	0.104	231	2,247
7	130.00	3,106	953,849	0.105	233	2,681
6	110.00	3,803	959,353	0.105	235	3,282
5	90.00	3,895	775,963	0.085	190	3,362
4	70.00	5,040	747,014	0.082	183	4,350
3	50.00	5,182	517,000	0.057	126	4,473
2	30.00	5,640	308,496	0.034	75	4,868
1	10.00	6,672	100,198	0.011	24	5,759
6' Omni	189.00	50	23,847	0.003	6	43
12' Dipole	187.00	120	56,521	0.006	14	104
RCU (Remote Control Unit)	183.00	3	1,378	0.000	0	3
RFS APXV18-206517S-C	183.00	79	36,367	0.004	9	68
Round Side Arm	183.00	450	206,631	0.023	51	388
Andrew LNX-6515DS-VTM	175.00	154	67,047	0.007	16	133
Ericsson AIR 21 B4A B2P	175.00	270	117,627	0.013	29	233
Ericsson AIR 21, 1.3 M, B2A B4P, AWS - 1	175.00	270	117,627	0.013	29	233
Ericsson KRY 112 144/1	175.00	33	14,377	0.002	4	28
Ericsson RRUS 11 B12	175.00	152	66,263	0.007	16	131
Flat Light Sector Frame	175.00	1,200	522,785	0.057	128	1,036
CCI OPA-65R-LCUU-H4 (14.4" width)	166.00	171	70,010	0.008	17	148
Commscope SBNHH-1D65A	166.00	101	41,146	0.005	10	87
Ericsson RRUS 32 B2	166.00	159	65,097	0.007	16	137
Ericsson RRUS 32 B30 (60 lbs)	166.00	180	73,695	0.008	18	155
Ericsson RRUS-11 (19.7")	166.00	153	62,640	0.007	15	132
Flat Light Sector Frame	166.00	1,200	491,297	0.054	120	1,036
Powerwave Allgon 7020	166.00	13	5,404	0.001	1	11



Site Number: 311305

Code:

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Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Equivalent Lateral Force Method

Powerwave Allgon 7770.00	166.00	105	42,988	0.005	11	91
Powerwave Allgon LGP21401	166.00	85	34,636	0.004	8	73
Raycap DC6-48-60-18-8F	166.00	40	16,377	0.002	4	35
10' Dipole	135.00	30	9,631	0.001	2	26
4' Dish w/ Radome	135.00	480	154,091	0.017	38	414
Round Sector Frame	135.00	300	96,307	0.011	24	259
Round Side Arm	135.00	600	192,613	0.021	47	518
6' FM antenna	125.00	60	17,594	0.002	4	52
Harris FML-4E	125.00	227	66,563	0.007	16	196
Round Side Arm	125.00	300	87,969	0.010	22	259
Scala PR-950	125.00	38	11,143	0.001	3	33
Antel BCD-87010 ___ 4°	87.00	26	5,073	0.001	1	23
Stand-Off	87.00	75	14,358	0.002	4	65
4' Dish w/ Radome	80.00	240	41,627	0.005	10	207
Channel Master Type 120	16.00	126	3,289	0.000	1	109
		45,678	9,110,638	1.000	2,227	39,424

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Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
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):	3.00
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	0.85
Redundancy Factor ( $\rho$ ):	1.30

**LoadCase (1.2 + 0.2Sds) \* DL + E**

**Seismic**

Section	Height Above Base (ft)	Weight (lb)	a	b	c	$S_{az}$	Horizontal Force (lb)	Vertical Force (lb)
10	185.30	506	1.786	1.477	0.954	0.343	75	626
9	170.00	1,741	1.504	0.510	0.547	0.206	155	2,153
8	150.00	2,604	1.171	-0.021	0.233	0.098	111	3,221
7	130.00	3,106	0.879	-0.121	0.080	0.056	76	3,842
6	110.00	3,803	0.630	-0.064	0.018	0.050	83	4,704
5	90.00	3,895	0.421	0.011	0.006	0.050	85	4,818
4	70.00	5,040	0.255	0.054	0.017	0.044	96	6,234
3	50.00	5,182	0.130	0.069	0.033	0.034	77	6,410
2	30.00	5,640	0.047	0.071	0.042	0.025	62	6,976
1	10.00	6,672	0.005	0.045	0.026	0.014	40	8,253
6' Omni	189.00	50	1.858	1.817	1.081	0.384	8	62
12' Dipole	187.00	120	1.819	1.628	1.011	0.362	19	148
RCU (Remote Control Unit)	183.00	3	1.742	1.289	0.881	0.319	0	4
RFS APXV18-206517S-C	183.00	79	1.742	1.289	0.881	0.319	11	98
Round Side Arm	183.00	450	1.742	1.289	0.881	0.319	62	557
Andrew LNX-6515DS-VTM	175.00	154	1.593	0.758	0.661	0.245	16	190
Ericsson AIR 21 B4A B2P	175.00	270	1.593	0.758	0.661	0.245	29	334
Ericsson AIR 21, 1.3 M, B2A B4P,	175.00	270	1.593	0.758	0.661	0.245	29	334
Ericsson KRY 112 144/1	175.00	33	1.593	0.758	0.661	0.245	4	41
Ericsson RRUS 11 B12	175.00	152	1.593	0.758	0.661	0.245	16	188
Flat Light Sector Frame	175.00	1,200	1.593	0.758	0.661	0.245	127	1,484
CCI OPA-65R-LCUU-H4 (14.4"	166.00	171	1.434	0.351	0.467	0.178	13	212
Commscope SBNHH-1D65A	166.00	101	1.434	0.351	0.467	0.178	8	124
Ericsson RRUS 32 B2	166.00	159	1.434	0.351	0.467	0.178	12	197
Ericsson RRUS 32 B30 (60 lbs)	166.00	180	1.434	0.351	0.467	0.178	14	223
Ericsson RRUS-11 (19.7")	166.00	153	1.434	0.351	0.467	0.178	12	189
Flat Light Sector Frame	166.00	1,200	1.434	0.351	0.467	0.178	93	1,484
Powerwave Allgon 7020	166.00	13	1.434	0.351	0.467	0.178	1	16
Powerwave Allgon 7770.00	166.00	105	1.434	0.351	0.467	0.178	8	130
Powerwave Allgon LGP21401	166.00	85	1.434	0.351	0.467	0.178	7	105
Raycap DC6-48-60-18-8F	166.00	40	1.434	0.351	0.467	0.178	3	49
10' Dipole	135.00	30	0.948	-0.119	0.107	0.062	1	37
4' Dish w/ Radome	135.00	480	0.948	-0.119	0.107	0.062	13	594
Round Sector Frame	135.00	300	0.948	-0.119	0.107	0.062	8	371
Round Side Arm	135.00	600	0.948	-0.119	0.107	0.062	16	742
6' FM antenna	125.00	60	0.813	-0.114	0.058	0.053	1	74
Harris FML-4E	125.00	227	0.813	-0.114	0.058	0.053	5	281
Round Side Arm	125.00	300	0.813	-0.114	0.058	0.053	7	371



Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Equivalent Modal Analysis Method

Scala PR-950	125.00	38	0.813	-0.114	0.058	0.053	1	47
Antel BCD-87010 ___ 4°	87.00	26	0.394	0.020	0.007	0.050	1	33
Stand-Off	87.00	75	0.394	0.020	0.007	0.050	2	93
4' Dish w/ Radome	80.00	240	0.333	0.037	0.010	0.048	5	297
Channel Master Type 120	16.00	126	0.013	0.059	0.034	0.018	1	156
		45,678	47.806	16.600	16.046	6.504	1,413	56,499

### LoadCase (0.9 - 0.2Sds) \* DL + E

### Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S <sub>az</sub>	Horizontal Force (lb)	Vertical Force (lb)
10	185.30	506	1.786	1.477	0.954	0.343	75	437
9	170.00	1,741	1.504	0.510	0.547	0.206	155	1,502
8	150.00	2,604	1.171	-0.021	0.233	0.098	111	2,247
7	130.00	3,106	0.879	-0.121	0.080	0.056	76	2,681
6	110.00	3,803	0.630	-0.064	0.018	0.050	83	3,282
5	90.00	3,895	0.421	0.011	0.006	0.050	85	3,362
4	70.00	5,040	0.255	0.054	0.017	0.044	96	4,350
3	50.00	5,182	0.130	0.069	0.033	0.034	77	4,473
2	30.00	5,640	0.047	0.071	0.042	0.025	62	4,868
1	10.00	6,672	0.005	0.045	0.026	0.014	40	5,759
6' Omni	189.00	50	1.858	1.817	1.081	0.384	8	43
12' Dipole	187.00	120	1.819	1.628	1.011	0.362	19	104
RCU (Remote Control Unit)	183.00	3	1.742	1.289	0.881	0.319	0	3
RFS APXV18-206517S-C	183.00	79	1.742	1.289	0.881	0.319	11	68
Round Side Arm	183.00	450	1.742	1.289	0.881	0.319	62	388
Andrew LNX-6515DS-VTM	175.00	154	1.593	0.758	0.661	0.245	16	133
Ericsson AIR 21 B4A B2P	175.00	270	1.593	0.758	0.661	0.245	29	233
Ericsson AIR 21, 1.3 M, B2A B4P,	175.00	270	1.593	0.758	0.661	0.245	29	233
Ericsson KRY 112 144/1	175.00	33	1.593	0.758	0.661	0.245	4	28
Ericsson RRUS 11 B12	175.00	152	1.593	0.758	0.661	0.245	16	131
Flat Light Sector Frame	175.00	1,200	1.593	0.758	0.661	0.245	127	1,036
CCI OPA-65R-LCUU-H4 (14.4"	166.00	171	1.434	0.351	0.467	0.178	13	148
Commscope SBNHH-1D65A	166.00	101	1.434	0.351	0.467	0.178	8	87
Ericsson RRUS 32 B2	166.00	159	1.434	0.351	0.467	0.178	12	137
Ericsson RRUS 32 B30 (60 lbs)	166.00	180	1.434	0.351	0.467	0.178	14	155
Ericsson RRUS-11 (19.7")	166.00	153	1.434	0.351	0.467	0.178	12	132
Flat Light Sector Frame	166.00	1,200	1.434	0.351	0.467	0.178	93	1,036
Powerwave Allgon 7020	166.00	13	1.434	0.351	0.467	0.178	1	11
Powerwave Allgon 7770.00	166.00	105	1.434	0.351	0.467	0.178	8	91
Powerwave Allgon LGP21401	166.00	85	1.434	0.351	0.467	0.178	7	73
Raycap DC6-48-60-18-8F	166.00	40	1.434	0.351	0.467	0.178	3	35
10' Dipole	135.00	30	0.948	-0.119	0.107	0.062	1	26
4' Dish w/ Radome	135.00	480	0.948	-0.119	0.107	0.062	13	414
Round Sector Frame	135.00	300	0.948	-0.119	0.107	0.062	8	259
Round Side Arm	135.00	600	0.948	-0.119	0.107	0.062	16	518
6' FM antenna	125.00	60	0.813	-0.114	0.058	0.053	1	52
Harris FML-4E	125.00	227	0.813	-0.114	0.058	0.053	5	196
Round Side Arm	125.00	300	0.813	-0.114	0.058	0.053	7	259
Scala PR-950	125.00	38	0.813	-0.114	0.058	0.053	1	33
Antel BCD-87010 ___ 4°	87.00	26	0.394	0.020	0.007	0.050	1	23
Stand-Off	87.00	75	0.394	0.020	0.007	0.050	2	65
4' Dish w/ Radome	80.00	240	0.333	0.037	0.010	0.048	5	207
Channel Master Type 120	16.00	126	0.013	0.059	0.034	0.018	1	109
		45,678	47.806	16.600	16.046	6.504	1,413	39,424

Site Number: 311305

Code: ANSI/TIA-222-G

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Force/Stress Summary

Section: 1		1		Bot Elev (ft): 0.00				Height (ft): 20.000							
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 12" DIA PIPE	-451.65	1.2D + 1.6W	6.43	100	100	100	17.6	50.0	642.27	0	0	0.00	0.00	70 Member X
	HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 4X4X0.25	-12.10	1.2D + 1.6W 90	20.05	48	48	48	145.3	43.5	20.76	0	0	0.00	0.00	58 Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
LEG	PST - 12" DIA PIPE	408.69	0.9D + 1.6W 60	50	65	657.00	0	0	0.00	0.00		62	Member
	HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 4X4X0.25	12.62	1.2D + 1.6W 90	50	65	87.30	0	0	0.00	0.00	0.00	14	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		373.60	0.9D + 1.6W 180	0.00	0	0	
Top Compression		416.91	1.2D + 1.6W	0.00	0		
Bot Tension		410.30	0.9D + 1.6W 180	0.00	0		
Bot Compression		459.02	1.2D + 1.6W	0.00	0		

Section: 2		2		Bot Elev (ft): 20.00				Height (ft): 20.000							
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 10" DIA PIPE	-407.60	1.2D + 1.6W	6.43	100	100	100	21.0	50.0	518.48	0	0	0.00	0.00	78 Member X
	HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3.5X3.5X0.25	-11.95	1.2D + 1.6W 90	18.77	48	48	48	157.2	50.0	15.46	0	0	0.00	0.00	77 Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
LEG	PST - 10" DIA PIPE	370.53	1.2D + 1.6W 180	50	65	535.50	0	0	0.00	0.00		69	Member
	HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 3.5X3.5X0.25	11.69	1.2D + 1.6W 90	50	65	76.05	0	0	0.00	0.00	0.00	15	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		333.03	0.9D + 1.6W 180	0.00	0	0	
Top Compression		370.17	1.2D + 1.6W	0.00	0		
Bot Tension		373.60	0.9D + 1.6W 180	0.00	0		
Bot Compression		416.91	1.2D + 1.6W	0.00	0		



Site Number: 311305

Code: ANSI/TIA-222-G

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Engineering Number: OAA719816\_C3\_01

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### Force/Stress Summary

Section: 3    3		Bot Elev (ft): 40.00				Height (ft): 20.000						Shear Bear			
		Pu	Len	Bracing %			F'y	Phic Pn	Num	Num	phiRnv	phiRn	Use		
Max Compression Member		(kip) Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PST - 10" DIA PIPE	-369.69	0.38	100	100	100	1.2	50.0	535.44	0	0	0.00	0.00	69	Member X
	HORIZ	0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 3X3X0.25	-11.36	16.90	47	47	47	161.1	50.0	12.54	0	0	0.00	0.00	90	Member Z

Max Tension Member		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use		
		(kip) Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls	
								(kip)	(kip)	(kip)			
LEG	PST - 10" DIA PIPE	333.34	50	65	535.50	0	0	0.00	0.00		62	Member	
	HORIZ	0.00	0	0	0.00	0	0	0.00	0.00	0.00	0		
DIAG	SAE - 3X3X0.25	11.14	50	65	64.80	0	0	0.00	0.00	0.00	17	Member	

Max Splice Forces		Pu	phiRnt	Use	Num		
		(kip) Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		290.24	0.00	0	0		
Top Compression		321.59	0.00	0			
Bot Tension		333.03	0.00	0			
Bot Compression		370.17	0.00	0			

Section: 4    4		Bot Elev (ft): 60.00				Height (ft): 20.000						Shear Bear			
		Pu	Len	Bracing %			F'y	Phic Pn	Num	Num	phiRnv	phiRn	Use		
Max Compression Member		(kip) Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PST - 10" DIA PIPE	-320.92	0.38	100	100	100	1.2	50.0	535.44	0	0	0.00	0.00	59	Member X
	HORIZ	0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 3X3X0.25	-13.04	15.15	48	48	48	147.5	50.0	14.96	0	0	0.00	0.00	87	Member Z

Max Tension Member		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use		
		(kip) Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls	
								(kip)	(kip)	(kip)			
LEG	PST - 10" DIA PIPE	290.31	50	65	535.50	0	0	0.00	0.00		54	Member	
	HORIZ	0.00	0	0	0.00	0	0	0.00	0.00	0.00	0		
DIAG	SAE - 3X3X0.25	13.01	50	65	64.80	0	0	0.00	0.00	0.00	20	Member	

Max Splice Forces		Pu	phiRnt	Use	Num		
		(kip) Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		235.16	0.00	0	0		
Top Compression		260.54	0.00	0			
Bot Tension		290.24	0.00	0			
Bot Compression		321.59	0.00	0			

Site Number: 311305

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Force/Stress Summary

Section: 5    5		Bot Elev (ft): 80.00		Height (ft): 20.000												
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)		Bear phiRn (kip)	Use %	Controls
LEG	PST - 8" DIA PIPE	-249.39	1.2D + 1.6W	6.42	100	100	100	26.2	50.0	359.48	0	0	0.00	0.00	69	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 3X3X0.1875	-11.47	1.2D + 1.6W 90	13.81	48	48	48	133.5	44.0	13.82	0	0	0.00	0.00	83	Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls	
LEG	PST - 8" DIA PIPE	235.50	0.9D + 1.6W 180	50	65	378.00	0	0	0.00	0.00			62	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00		0	
DIAG	SAE - 3X3X0.1875	11.53	1.2D + 1.6W 90	50	65	49.05	0	0	0.00	0.00	0.00		23	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		181.39	0.9D + 1.6W 180	0.00	0	0	
Top Compression		201.43	1.2D + 1.6W	0.00	0		
Bot Tension		235.16	0.9D + 1.6W 180	0.00	0		
Bot Compression		260.54	1.2D + 1.6W	0.00	0		

Section: 6    6		Bot Elev (ft): 100.0		Height (ft): 20.000												
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)		Bear phiRn (kip)	Use %	Controls
LEG	PST - 8" DIA PIPE	-201.10	1.2D + 1.6W	0.38	100	100	100	1.5	50.0	377.94	0	0	0.00	0.00	53	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 3X3X0.1875	-10.89	1.2D + 1.6W 90	12.50	48	48	48	120.8	44.0	16.87	0	0	0.00	0.00	64	Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls	
LEG	PST - 8" DIA PIPE	181.60	0.9D + 1.6W 180	50	65	378.00	0	0	0.00	0.00			48	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00		0	
DIAG	SAE - 3X3X0.1875	10.80	1.2D + 1.6W 90	50	65	49.05	0	0	0.00	0.00	0.00		22	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		125.62	0.9D + 1.6W 180	0.00	0	0	
Top Compression		140.98	1.2D + 1.6W	0.00	0		
Bot Tension		181.39	0.9D + 1.6W 180	0.00	0		
Bot Compression		201.43	1.2D + 1.6W	0.00	0		



Site Number: 311305

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### Force/Stress Summary

Section: 7    7		Bot Elev (ft): 120.0		Height (ft): 20.000									
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %	F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
					X Y Z KL/R								
LEG	PST - 6" DIA PIPE	-140.66	1.2D + 1.6W	0.38	100 100 100	2.0	50.0	251.03	0	0	0.00	0.00	56 Member X
HORIZ		0.00		0.000	0 0 0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3X3X0.1875	-10.19	1.2D + 1.6W	11.24	48 48 48	111.5	44.0	19.40	0	0	0.00	0.00	52 Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
LEG	PST - 6" DIA PIPE	125.83	0.9D + 1.6W 180	50	65	251.10	0	0	0.00	0.00		50	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 3X3X0.1875	10.07	1.2D + 1.6W 330	50	65	49.05	0	0	0.00	0.00	0.00	20	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		73.62	0.9D + 1.6W 180	0.00	0	0	
Top Compression		83.59	1.2D + 1.6W	0.00	0		
Bot Tension		125.62	0.9D + 1.6W 180	0.00	0		
Bot Compression		140.98	1.2D + 1.6W	0.00	0		

Section: 8    8		Bot Elev (ft): 140.0		Height (ft): 20.000									
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %	F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
					X Y Z KL/R								
LEG	PST - 5" DIA PIPE	-75.44	1.2D + 1.6W	6.55	100 100 100	41.8	50.0	170.30	0	0	0.00	0.00	44 Member X
HORIZ		0.00		0.000	0 0 0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2.5X2.5X0.1875	-6.29	1.2D + 1.6W 90	10.12	48 48 48	118.4	50.0	14.55	0	0	0.00	0.00	43 Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
LEG	PST - 5" DIA PIPE	73.78	0.9D + 1.6W 180	50	65	193.50	0	0	0.00	0.00		38	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 2.5X2.5X0.1875	6.19	1.2D + 1.6W 90	50	65	40.59	0	0	0.00	0.00	0.00	15	Member

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		33.30	0.9D + 1.6W 180	0.00	0	0	
Top Compression		40.13	1.2D + 1.6W	0.00	0		
Bot Tension		73.62	0.9D + 1.6W 180	0.00	0		
Bot Compression		83.59	1.2D + 1.6W	0.00	0		

Site Number: 311305

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Site Name: GLFD-GUILFORD REBUILD CT, CT

Engineering Number: OAA719816\_C3\_01

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Customer: AT&T MOBILITY

### Force/Stress Summary

Section: 9    9		Bot Elev (ft): 160.0		Height (ft): 20.000														
		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear		Bear						
		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use					
<b>Max Compression Member</b>													%	Controls				
LEG	PST - 3" DIA PIPE	-31.28	1.2D + 1.6W	6.54	100	100	100	67.7	50.0	71.80	0	0	0.00	0.00	43	Member X		
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0			
DIAG	SAE - 2.5X2.5X0.1875	-6.55	1.2D + 1.6W	9.222	48	48	48	110.5	50.0	16.63	0	0	0.00	0.00	39	Member Z		
		Pu	Load Case	Fy	Fu	Phit Pn		Num	Num	Shear		Bear	Blk Shear		Use			
		(kip)		(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	phiRnv	(kip)	phiRn	(kip)	(kip)	%	Controls		
<b>Max Tension Member</b>																		
LEG	PST - 3" DIA PIPE	25.33	0.9D + 1.6W 180	50	65	100.35	0	0	0.00	0.00	0.00	0.00	0.00	0.00	25	Member		
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0			
DIAG	SAE - 2.5X2.5X0.1875	6.31	1.2D + 1.6W 90	50	65	40.59	0	0	0.00	0.00	0.00	0.00	0.00	0.00	15	Member		
<b>Max Splice Forces</b>		Pu	Load Case	phiRnt			Use	Num										
		(kip)		(kip)			%	Bolts	Bolt Type									
Top Tension		2.70	0.9D + 1.6W 180	0.00			0	0										
Top Compression		3.95	1.2D + 1.6W	0.00			0											
Bot Tension		33.30	0.9D + 1.6W 180	0.00			0											
Bot Compression		40.13	1.2D + 1.6W	0.00			0											

Section: 10    10		Bot Elev (ft): 180.0		Height (ft): 10.599														
		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear		Bear						
		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use					
<b>Max Compression Member</b>													%	Controls				
LEG	PST - 2" DIA PIPE	-2.47	1.2D + 1.6W	5.11	100	100	100	77.9	50.0	30.88	0	0	0.00	0.00	8	Member X		
HORIZ		-0.24	1.2D + 1.6W	6.500	100	100	100	196.0	36.0	2.82	0	0	0.00	0.00	8	Member Z		
DIAG	SAE - 2X2X0.1875	-1.16	1.2D + 1.6W	8.269	48	48	48	120.9	50.0	11.05	0	0	0.00	0.00	10	Member Z		
		Pu	Load Case	Fy	Fu	Phit Pn		Num	Num	Shear		Bear	Blk Shear		Use			
		(kip)		(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	phiRnv	(kip)	phiRn	(kip)	(kip)	%	Controls		
<b>Max Tension Member</b>																		
LEG	PST - 2" DIA PIPE	2.71	1.2D + 1.6W 180	50	65	48.15	0	0	0.00	0.00	0.00	0.00	0.00	0.00	5	Member		
HORIZ		0.25	1.2D + 1.6W 60	36	58	15.55	0	0	0.00	0.00	0.00	0.00	0.00	0.00	1	Member		
DIAG	SAE - 2X2X0.1875	1.11	1.2D + 1.6W	50	65	32.17	0	0	0.00	0.00	0.00	0.00	0.00	0.00	3	Member		
<b>Max Splice Forces</b>		Pu	Load Case	phiRnt			Use	Num										
		(kip)		(kip)			%	Bolts	Bolt Type									
Top Tension		0.00		0.00			0	0										
Top Compression		0.28	1.2D + 1.0Di +	0.00			0											
Bot Tension		2.70	0.9D + 1.6W 180	0.00			0											
Bot Compression		3.95	1.2D + 1.6W	0.00			0											

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### Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	11.55	00.00	0	1	0.00	457.65	-45.01	
	11.55	00.00	120	1a	15.53	-201.42	-15.02	
	11.55	00.00	240	1b	-15.53	-201.42	-15.02	
1.2D + 1.6W 60 deg	11.55	00.00	0	1	-4.70	229.50	-22.22	
	11.55	00.00	120	1a	-21.55	227.88	7.04	
	11.55	00.00	240	1b	-35.75	-402.56	-20.61	
1.2D + 1.6W 90 deg	11.55	00.00	0	1	-5.67	18.28	-1.20	
	11.55	00.00	120	1a	-34.16	385.91	16.60	
	11.55	00.00	240	1b	-32.63	-349.38	-15.40	
1.2D + 1.6W 120 deg	11.55	00.00	0	1	-5.29	-201.42	20.96	
	11.55	00.00	120	1a	-38.96	456.04	22.47	
	11.55	00.00	240	1b	-20.75	-199.80	-5.90	
1.2D + 1.6W 180 deg	11.55	00.00	0	1	0.00	-404.18	41.30	
	11.55	00.00	120	1a	-16.91	229.50	15.14	
	11.55	00.00	240	1b	16.91	229.50	15.14	
1.2D + 1.6W 210 deg	11.55	00.00	0	1	2.97	-351.25	36.00	
	11.55	00.00	120	1a	1.76	19.22	5.49	
	11.55	00.00	240	1b	31.49	386.85	21.26	
1.2D + 1.6W 240 deg	11.55	00.00	0	1	5.29	-201.42	20.96	
	11.55	00.00	120	1a	20.75	-199.80	-5.90	
	11.55	00.00	240	1b	38.96	456.04	22.47	
1.2D + 1.6W 300 deg	11.55	00.00	0	1	4.70	229.50	-22.22	
	11.55	00.00	120	1a	35.75	-402.56	-20.61	
	11.55	00.00	240	1b	21.55	227.88	7.04	
1.2D + 1.6W 330 deg	11.55	00.00	0	1	2.70	387.78	-37.92	
	11.55	00.00	120	1a	29.69	-350.31	-20.53	
	11.55	00.00	240	1b	3.84	17.35	-4.29	
0.9D + 1.6W Normal	11.55	00.00	0	1	0.00	452.59	-44.69	
	11.55	00.00	120	1a	15.78	-205.74	-15.18	
	11.55	00.00	240	1b	-15.78	-205.74	-15.18	
0.9D + 1.6W 60 deg	11.55	00.00	0	1	-4.71	224.69	-21.91	
	11.55	00.00	120	1a	-21.29	223.07	6.87	
	11.55	00.00	240	1b	-36.00	-406.65	-20.76	
0.9D + 1.6W 90 deg	11.55	00.00	0	1	-5.68	13.71	-0.90	
	11.55	00.00	120	1a	-33.89	380.93	16.44	
	11.55	00.00	240	1b	-32.88	-353.53	-15.55	
0.9D + 1.6W 120 deg	11.55	00.00	0	1	-5.30	-205.74	21.25	
	11.55	00.00	120	1a	-38.69	450.97	22.31	
	11.55	00.00	240	1b	-21.02	-204.12	-6.04	
0.9D + 1.6W 180 deg	11.55	00.00	0	1	0.00	-408.27	41.59	
	11.55	00.00	120	1a	-16.64	224.69	15.00	
	11.55	00.00	240	1b	16.64	224.69	15.00	
0.9D + 1.6W 210 deg	11.55	00.00	0	1	2.98	-355.40	36.29	
	11.55	00.00	120	1a	2.03	14.65	5.35	



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	11.55	00.00	240	1b	31.22	381.86	21.11
0.9D + 1.6W 240 deg	11.55	00.00	0	1	5.30	-205.74	21.25
	11.55	00.00	120	1a	21.02	-204.12	-6.04
	11.55	00.00	240	1b	38.69	450.97	22.31
0.9D + 1.6W 300 deg	11.55	00.00	0	1	4.71	224.69	-21.91
	11.55	00.00	120	1a	36.00	-406.65	-20.76
	11.55	00.00	240	1b	21.29	223.07	6.87
0.9D + 1.6W 330 deg	11.55	00.00	0	1	2.70	382.79	-37.61
	11.55	00.00	120	1a	29.94	-354.47	-20.68
	11.55	00.00	240	1b	3.58	12.78	-4.45
1.2D + 1.0Di + 1.0Wi Normal	11.55	00.00	0	1	0.00	169.33	-6.11
	11.55	00.00	120	1a	9.65	-12.45	-7.12
	11.55	00.00	240	1b	-9.65	-12.45	-7.12
1.2D + 1.0Di + 1.0Wi 60 deg	11.55	00.00	0	1	-1.29	107.69	0.01
	11.55	00.00	120	1a	-0.62	107.24	-1.12
	11.55	00.00	240	1b	-15.32	-70.50	-8.84
1.2D + 1.0Di + 1.0Wi 90 deg	11.55	00.00	0	1	-1.51	48.14	5.89
	11.55	00.00	120	1a	-4.13	151.23	1.52
	11.55	00.00	240	1b	-14.38	-54.95	-7.42
1.2D + 1.0Di + 1.0Wi 120 deg	11.55	00.00	0	1	-1.35	-12.49	11.92
	11.55	00.00	120	1a	-5.29	168.96	3.05
	11.55	00.00	240	1b	-10.98	-12.04	-4.79
1.2D + 1.0Di + 1.0Wi 180 deg	11.55	00.00	0	1	0.00	-70.87	17.69
	11.55	00.00	120	1a	0.65	107.65	1.10
	11.55	00.00	240	1b	-0.65	107.65	1.10
1.2D + 1.0Di + 1.0Wi 210 deg	11.55	00.00	0	1	0.76	-55.47	16.17
	11.55	00.00	120	1a	5.85	48.41	-1.65
	11.55	00.00	240	1b	3.39	151.49	2.81
1.2D + 1.0Di + 1.0Wi 240 deg	11.55	00.00	0	1	1.35	-12.49	11.92
	11.55	00.00	120	1a	10.98	-12.04	-4.79
	11.55	00.00	240	1b	5.29	168.96	3.05
1.2D + 1.0Di + 1.0Wi 300 deg	11.55	00.00	0	1	1.29	107.69	0.01
	11.55	00.00	120	1a	15.32	-70.50	-8.84
	11.55	00.00	240	1b	0.62	107.24	-1.12
1.2D + 1.0Di + 1.0Wi 330 deg	11.55	00.00	0	1	0.74	151.75	-4.35
	11.55	00.00	120	1a	13.62	-55.21	-8.74
	11.55	00.00	240	1b	-4.36	47.88	-4.25
(1.2 + 0.2Sds) * DL + E Normal M1	11.55	00.00	0	1	0.00	34.66	-2.61
	11.55	00.00	120	1a	-0.52	10.22	0.21
	11.55	00.00	240	1b	0.52	10.22	0.21
(1.2 + 0.2Sds) * DL + E Normal M2	11.55	00.00	0	1	0.00	29.29	-2.12
	11.55	00.00	120	1a	-0.71	12.91	0.37
	11.55	00.00	240	1b	0.71	12.91	0.37
(1.2 + 0.2Sds) * DL + E 60 deg M1	11.55	00.00	0	1	-0.08	26.51	-1.93
	11.55	00.00	120	1a	-1.71	26.51	0.90
	11.55	00.00	240	1b	-0.11	2.07	-0.06
(1.2 + 0.2Sds) * DL + E 60 deg M2	11.55	00.00	0	1	-0.04	23.74	-1.67
	11.55	00.00	120	1a	-1.47	23.74	0.81
	11.55	00.00	240	1b	0.33	7.62	0.19

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(1.2 + 0.2Sds) * DL + E 90 deg M1	11.55	00.00	0	1	-0.09	18.37	-1.24
	11.55	00.00	120	1a	-2.13	32.48	1.18
	11.55	00.00	240	1b	0.03	4.26	0.07
(1.2 + 0.2Sds) * DL + E 90 deg M2	11.55	00.00	0	1	-0.04	18.37	-1.24
	11.55	00.00	120	1a	-1.74	27.82	0.98
	11.55	00.00	240	1b	0.41	8.91	0.26
(1.2 + 0.2Sds) * DL + E 120 deg M1	11.55	00.00	0	1	-0.08	10.22	-0.56
	11.55	00.00	120	1a	-2.26	34.66	1.31
	11.55	00.00	240	1b	0.44	10.22	0.35
(1.2 + 0.2Sds) * DL + E 120 deg M2	11.55	00.00	0	1	-0.04	12.99	-0.81
	11.55	00.00	120	1a	-1.82	29.11	1.05
	11.55	00.00	240	1b	0.68	12.99	0.44
(1.2 + 0.2Sds) * DL + E 180 deg M1	11.55	00.00	0	1	0.00	2.07	0.13
	11.55	00.00	120	1a	-1.63	26.51	1.03
	11.55	00.00	240	1b	1.63	26.51	1.03
(1.2 + 0.2Sds) * DL + E 180 deg M2	11.55	00.00	0	1	0.00	7.44	-0.36
	11.55	00.00	120	1a	-1.44	23.83	0.87
	11.55	00.00	240	1b	1.44	23.83	0.87
(1.2 + 0.2Sds) * DL + E 210 deg M1	11.55	00.00	0	1	0.04	4.26	-0.06
	11.55	00.00	120	1a	-1.03	18.37	0.70
	11.55	00.00	240	1b	2.08	32.48	1.25
(1.2 + 0.2Sds) * DL + E 210 deg M2	11.55	00.00	0	1	0.02	9.06	-0.49
	11.55	00.00	120	1a	-1.05	18.37	0.66
	11.55	00.00	240	1b	1.71	27.67	1.01
(1.2 + 0.2Sds) * DL + E 240 deg M1	11.55	00.00	0	1	0.08	10.22	-0.56
	11.55	00.00	120	1a	-0.44	10.22	0.35
	11.55	00.00	240	1b	2.26	34.66	1.31
(1.2 + 0.2Sds) * DL + E 240 deg M2	11.55	00.00	0	1	0.04	12.99	-0.81
	11.55	00.00	120	1a	-0.68	12.99	0.44
	11.55	00.00	240	1b	1.82	29.11	1.05
(1.2 + 0.2Sds) * DL + E 300 deg M1	11.55	00.00	0	1	0.08	26.51	-1.93
	11.55	00.00	120	1a	0.11	2.07	-0.06
	11.55	00.00	240	1b	1.71	26.51	0.90
(1.2 + 0.2Sds) * DL + E 300 deg M2	11.55	00.00	0	1	0.04	23.74	-1.67
	11.55	00.00	120	1a	-0.33	7.62	0.19
	11.55	00.00	240	1b	1.47	23.74	0.81
(1.2 + 0.2Sds) * DL + E 330 deg M1	11.55	00.00	0	1	0.04	32.48	-2.43
	11.55	00.00	120	1a	-0.07	4.26	-0.01
	11.55	00.00	240	1b	1.12	18.37	0.54
(1.2 + 0.2Sds) * DL + E 330 deg M2	11.55	00.00	0	1	0.02	27.67	-1.99
	11.55	00.00	120	1a	-0.44	9.06	0.23
	11.55	00.00	240	1b	1.10	18.37	0.58
(0.9 - 0.2Sds) * DL + E Normal M1	11.55	00.00	0	1	0.00	29.08	-2.24
	11.55	00.00	120	1a	-0.20	4.68	0.02
	11.55	00.00	240	1b	0.20	4.68	0.02
(0.9 - 0.2Sds) * DL + E Normal M2	11.55	00.00	0	1	0.00	23.72	-1.74
	11.55	00.00	120	1a	-0.39	7.36	0.18
	11.55	00.00	240	1b	0.39	7.36	0.18

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(0.9 - 0.2Sds) * DL + E 60 deg M1	11.55	00.00	0	1	-0.08	20.95	-1.55
	11.55	00.00	120	1a	-1.38	20.95	0.71
	11.55	00.00	240	1b	-0.44	-3.45	-0.25
(0.9 - 0.2Sds) * DL + E 60 deg M2	11.55	00.00	0	1	-0.04	18.18	-1.30
	11.55	00.00	120	1a	-1.14	18.18	0.62
	11.55	00.00	240	1b	0.00	2.09	0.00
(0.9 - 0.2Sds) * DL + E 90 deg M1	11.55	00.00	0	1	-0.09	12.82	-0.87
	11.55	00.00	120	1a	-1.80	26.91	0.99
	11.55	00.00	240	1b	-0.30	-1.27	-0.12
(0.9 - 0.2Sds) * DL + E 90 deg M2	11.55	00.00	0	1	-0.04	12.82	-0.87
	11.55	00.00	120	1a	-1.42	22.26	0.79
	11.55	00.00	240	1b	0.08	3.37	0.07
(0.9 - 0.2Sds) * DL + E 120 deg M1	11.55	00.00	0	1	-0.08	4.68	-0.18
	11.55	00.00	120	1a	-1.94	29.08	1.12
	11.55	00.00	240	1b	0.12	4.68	0.16
(0.9 - 0.2Sds) * DL + E 120 deg M2	11.55	00.00	0	1	-0.04	7.45	-0.44
	11.55	00.00	120	1a	-1.50	23.54	0.87
	11.55	00.00	240	1b	0.36	7.45	0.25
(0.9 - 0.2Sds) * DL + E 180 deg M1	11.55	00.00	0	1	0.00	-3.45	0.50
	11.55	00.00	120	1a	-1.31	20.95	0.84
	11.55	00.00	240	1b	1.31	20.95	0.84
(0.9 - 0.2Sds) * DL + E 180 deg M2	11.55	00.00	0	1	0.00	1.91	0.01
	11.55	00.00	120	1a	-1.11	18.27	0.69
	11.55	00.00	240	1b	1.11	18.27	0.69
(0.9 - 0.2Sds) * DL + E 210 deg M1	11.55	00.00	0	1	0.04	-1.27	0.32
	11.55	00.00	120	1a	-0.71	12.82	0.51
	11.55	00.00	240	1b	1.76	26.91	1.07
(0.9 - 0.2Sds) * DL + E 210 deg M2	11.55	00.00	0	1	0.02	3.53	-0.12
	11.55	00.00	120	1a	-0.73	12.82	0.47
	11.55	00.00	240	1b	1.39	22.10	0.83
(0.9 - 0.2Sds) * DL + E 240 deg M1	11.55	00.00	0	1	0.08	4.68	-0.18
	11.55	00.00	120	1a	-0.12	4.68	0.16
	11.55	00.00	240	1b	1.94	29.08	1.12
(0.9 - 0.2Sds) * DL + E 240 deg M2	11.55	00.00	0	1	0.04	7.45	-0.44
	11.55	00.00	120	1a	-0.36	7.45	0.25
	11.55	00.00	240	1b	1.50	23.54	0.87
(0.9 - 0.2Sds) * DL + E 300 deg M1	11.55	00.00	0	1	0.08	20.95	-1.55
	11.55	00.00	120	1a	0.44	-3.45	-0.25
	11.55	00.00	240	1b	1.38	20.95	0.71
(0.9 - 0.2Sds) * DL + E 300 deg M2	11.55	00.00	0	1	0.04	18.18	-1.30
	11.55	00.00	120	1a	0.00	2.09	0.00
	11.55	00.00	240	1b	1.14	18.18	0.62
(0.9 - 0.2Sds) * DL + E 330 deg M1	11.55	00.00	0	1	0.04	26.91	-2.05
	11.55	00.00	120	1a	0.25	-1.27	-0.20
	11.55	00.00	240	1b	0.80	12.82	0.36
(0.9 - 0.2Sds) * DL + E 330 deg M2	11.55	00.00	0	1	0.02	22.10	-1.61
	11.55	00.00	120	1a	-0.11	3.53	0.04
	11.55	00.00	240	1b	0.77	12.82	0.40
1.0D + 1.0W Service Normal	11.55	00.00	0	1	0.00	113.35	-10.86



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	11.55	00.00	120	1a	2.83	-33.83	-2.97
	11.55	00.00	240	1b	-2.83	-33.83	-2.97
1.0D + 1.0W Service 60 deg	11.55	00.00	0	1	-1.08	62.49	-5.73
	11.55	00.00	120	1a	-5.49	62.13	1.93
	11.55	00.00	240	1b	-7.32	-78.94	-4.22
1.0D + 1.0W Service 90 deg	11.55	00.00	0	1	-1.27	15.23	-1.01
	11.55	00.00	120	1a	-8.34	97.50	4.09
	11.55	00.00	240	1b	-6.62	-67.04	-3.08
1.0D + 1.0W Service 120 deg	11.55	00.00	0	1	-1.16	-33.91	3.94
	11.55	00.00	120	1a	-9.41	113.14	5.43
	11.55	00.00	240	1b	-3.99	-33.56	-0.97
1.0D + 1.0W Service 180 deg	11.55	00.00	0	1	0.00	-79.16	8.45
	11.55	00.00	120	1a	-4.42	62.42	3.79
	11.55	00.00	240	1b	4.42	62.42	3.79
1.0D + 1.0W Service 210 deg	11.55	00.00	0	1	0.64	-67.44	7.29
	11.55	00.00	120	1a	-0.24	15.43	1.60
	11.55	00.00	240	1b	7.71	97.69	5.17
1.0D + 1.0W Service 240 deg	11.55	00.00	0	1	1.16	-33.91	3.94
	11.55	00.00	120	1a	3.99	-33.56	-0.97
	11.55	00.00	240	1b	9.41	113.14	5.43
1.0D + 1.0W Service 300 deg	11.55	00.00	0	1	1.08	62.49	-5.73
	11.55	00.00	120	1a	7.32	-78.94	-4.22
	11.55	00.00	240	1b	5.49	62.13	1.93
1.0D + 1.0W Service 330 deg	11.55	00.00	0	1	0.63	97.89	-9.27
	11.55	00.00	120	1a	5.99	-67.24	-4.19
	11.55	00.00	240	1b	1.50	15.02	-0.60

Max Uplift:	408.27 (kip)	Moment Ice:	2,098.97 (kip-ft)	Moment:	7,610.33 (kip-ft)	1.2D + 1.6W Normal
Max Down:	457.65 (kip)	Total Down Ice:	144.43 (kip)	Total Down:	54.81 (kip)	
Max Shear:	45.01 (kip)	Total Shear Ice:	20.34 (kip)	Total Shear:	75.06 (kip)	

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### Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
101 mph Normal with No Ice	13.21	0.017	0.0017	0.1079	0.1080
101 mph Normal with No Ice	80.00	0.375	0.0109	0.5350	0.5350
101 mph Normal with No Ice	86.79	0.439	0.0158	0.5601	0.5603
101 mph Normal with No Ice	126.79	0.925	0.0525	0.8671	0.8686
101 mph Normal with No Ice	133.21	1.020	0.0540	0.8486	0.8504
101 mph Normal with No Ice	166.54	1.582	0.0481	1.1063	1.1065
101 mph Normal with No Ice	173.08	1.704	0.0477	1.0504	1.0515
101 mph Normal with No Ice	185.49	1.941	0.0473	1.2452	1.2461
101 mph Normal with No Ice	190.60	2.037	0.0479	1.0455	1.0455
101 mph 60 degree with No Ice	13.21	0.016	-0.0067	0.1029	0.1031
101 mph 60 degree with No Ice	80.00	0.360	0.0434	0.5130	0.5148
101 mph 60 degree with No Ice	86.79	0.421	0.0525	0.5343	0.5367
101 mph 60 degree with No Ice	126.79	0.888	0.1163	0.7567	0.7624
101 mph 60 degree with No Ice	133.21	0.977	0.1214	0.8197	0.8236
101 mph 60 degree with No Ice	166.54	1.514	0.1395	1.0120	1.0216
101 mph 60 degree with No Ice	173.08	1.631	0.1478	1.0063	1.0110
101 mph 60 degree with No Ice	185.49	1.856	0.1836	0.9310	0.9406
101 mph 60 degree with No Ice	190.60	1.948	0.1900	1.0879	1.1044
101 mph 90 degree with No Ice	13.21	0.016	-0.0093	0.1065	0.1069
101 mph 90 degree with No Ice	80.00	0.362	-0.0584	0.5123	0.5132
101 mph 90 degree with No Ice	86.79	0.424	-0.0675	0.5373	0.5408
101 mph 90 degree with No Ice	126.79	0.893	-0.1294	0.7323	0.7425
101 mph 90 degree with No Ice	133.21	0.983	-0.1338	0.8290	0.8398
101 mph 90 degree with No Ice	166.54	1.523	-0.1347	1.0009	1.0095
101 mph 90 degree with No Ice	173.08	1.641	-0.1347	1.0203	1.0291
101 mph 90 degree with No Ice	185.49	1.867	-0.1347	0.8264	0.8373
101 mph 90 degree with No Ice	190.60	1.959	-0.1347	1.1172	1.1193
101 mph 120 degree with No Ice	13.21	0.017	-0.0096	0.1077	0.1079
101 mph 120 degree with No Ice	80.00	0.373	-0.0639	0.5324	0.5328
101 mph 120 degree with No Ice	86.79	0.437	-0.0745	0.5550	0.5573
101 mph 120 degree with No Ice	126.79	0.920	-0.1476	0.7869	0.7919
101 mph 120 degree with No Ice	133.21	1.013	-0.1538	0.8509	0.8599
101 mph 120 degree with No Ice	166.54	1.569	-0.1760	1.0488	1.0632
101 mph 120 degree with No Ice	173.08	1.690	-0.1850	1.0432	1.0591
101 mph 120 degree with No Ice	185.49	1.923	-0.2222	0.9661	0.9847
101 mph 120 degree with No Ice	190.60	2.018	-0.2284	1.1276	1.1280
101 mph 180 degree with No Ice	13.21	0.016	0.0014	0.1032	0.1032
101 mph 180 degree with No Ice	80.00	0.361	0.0117	0.5155	0.5155
101 mph 180 degree with No Ice	86.79	0.423	0.0169	0.5407	0.5409
101 mph 180 degree with No Ice	126.79	0.893	0.0542	0.8398	0.8415
101 mph 180 degree with No Ice	133.21	0.985	0.0558	0.8193	0.8212
101 mph 180 degree with No Ice	166.54	1.528	0.0501	1.0695	1.0703
101 mph 180 degree with No Ice	173.08	1.646	0.0505	1.0136	1.0149
101 mph 180 degree with No Ice	185.49	1.873	0.0508	1.2093	1.2104
101 mph 180 degree with No Ice	190.60	1.966	0.0502	1.0060	1.0060
101 mph 210 degree with No Ice	13.21	0.016	0.0060	0.1070	0.1070
101 mph 210 degree with No Ice	80.00	0.364	0.0416	0.5157	0.5159
101 mph 210 degree with No Ice	86.79	0.426	0.0489	0.5444	0.5446
101 mph 210 degree with No Ice	126.79	0.899	0.0986	0.8234	0.8248
101 mph 210 degree with No Ice	133.21	0.991	0.1031	0.8315	0.8331
101 mph 210 degree with No Ice	166.54	1.536	0.1245	1.0599	1.0672
101 mph 210 degree with No Ice	173.08	1.655	0.1332	1.0277	1.0305
101 mph 210 degree with No Ice	185.49	1.884	0.1695	1.1417	1.1471
101 mph 210 degree with No Ice	190.60	1.977	0.1754	1.0362	1.0506
101 mph 240 degree with No Ice	13.21	0.017	0.0096	0.1077	0.1079

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101 mph 240 degree with No Ice	80.00	0.373	0.0639	0.5324	0.5328
101 mph 240 degree with No Ice	86.79	0.437	0.0745	0.5550	0.5573
101 mph 240 degree with No Ice	126.79	0.920	0.1476	0.7869	0.7919
101 mph 240 degree with No Ice	133.21	1.013	0.1538	0.8509	0.8599
101 mph 240 degree with No Ice	166.54	1.569	0.1760	1.0488	1.0632
101 mph 240 degree with No Ice	173.08	1.690	0.1850	1.0432	1.0591
101 mph 240 degree with No Ice	185.49	1.923	0.2222	0.9661	0.9847
101 mph 240 degree with No Ice	190.60	2.018	0.2284	1.1276	1.1280
101 mph 300 degree with No Ice	13.21	0.016	0.0067	0.1029	0.1031
101 mph 300 degree with No Ice	80.00	0.360	0.0382	0.5130	0.5148
101 mph 300 degree with No Ice	86.79	0.421	0.0434	0.5343	0.5367
101 mph 300 degree with No Ice	126.79	0.888	0.0784	0.7567	0.7624
101 mph 300 degree with No Ice	133.21	0.977	0.0800	0.8197	0.8236
101 mph 300 degree with No Ice	166.54	1.514	0.0605	1.0120	1.0216
101 mph 300 degree with No Ice	173.08	1.631	0.0518	1.0063	1.0110
101 mph 300 degree with No Ice	185.49	1.856	0.0158	0.9310	0.9406
101 mph 300 degree with No Ice	190.60	1.948	0.0099	1.0879	1.1044
101 mph 330 degree with No Ice	13.21	0.016	0.0033	0.1068	0.1070
101 mph 330 degree with No Ice	80.00	0.364	0.0169	0.5159	0.5172
101 mph 330 degree with No Ice	86.79	0.426	0.0188	0.5434	0.5453
101 mph 330 degree with No Ice	126.79	0.899	0.0311	0.8202	0.8257
101 mph 330 degree with No Ice	133.21	0.991	0.0311	0.8286	0.8302
101 mph 330 degree with No Ice	166.54	1.536	0.0111	1.0595	1.0677
101 mph 330 degree with No Ice	173.08	1.655	0.0024	1.0275	1.0291
101 mph 330 degree with No Ice	185.49	1.884	-0.0339	1.1416	1.1454
101 mph 330 degree with No Ice	190.60	1.977	-0.0399	1.0367	1.0516
101 mph Normal with No Ice (Reduced DL)	13.21	0.017	0.0017	0.1078	0.1079
101 mph Normal with No Ice (Reduced DL)	80.00	0.374	0.0109	0.5341	0.5341
101 mph Normal with No Ice (Reduced DL)	86.79	0.438	0.0159	0.5592	0.5594
101 mph Normal with No Ice (Reduced DL)	126.79	0.924	0.0525	0.8656	0.8672
101 mph Normal with No Ice (Reduced DL)	133.21	1.018	0.0541	0.8470	0.8487
101 mph Normal with No Ice (Reduced DL)	166.54	1.579	0.0481	1.1041	1.1043
101 mph Normal with No Ice (Reduced DL)	173.08	1.702	0.0478	1.0482	1.0493
101 mph Normal with No Ice (Reduced DL)	185.49	1.937	0.0474	1.2431	1.2440
101 mph Normal with No Ice (Reduced DL)	190.60	2.033	0.0480	1.0432	1.0432
101 mph 60 deg with No Ice (Reduced DL)	13.21	0.016	-0.0067	0.1029	0.1031
101 mph 60 deg with No Ice (Reduced DL)	80.00	0.359	0.0434	0.5122	0.5140
101 mph 60 deg with No Ice (Reduced DL)	86.79	0.421	0.0524	0.5335	0.5359
101 mph 60 deg with No Ice (Reduced DL)	126.79	0.886	0.1162	0.7554	0.7610
101 mph 60 deg with No Ice (Reduced DL)	133.21	0.976	0.1213	0.8182	0.8221
101 mph 60 deg with No Ice (Reduced DL)	166.54	1.512	0.1394	1.0099	1.0195
101 mph 60 deg with No Ice (Reduced DL)	173.08	1.628	0.1477	1.0043	1.0091
101 mph 60 deg with No Ice (Reduced DL)	185.49	1.853	0.1834	0.9290	0.9386
101 mph 60 deg with No Ice (Reduced DL)	190.60	1.944	0.1898	1.0858	1.1023
101 mph 90 deg with No Ice (Reduced DL)	13.21	0.016	-0.0093	0.1064	0.1068
101 mph 90 deg with No Ice (Reduced DL)	80.00	0.362	-0.0584	0.5115	0.5124
101 mph 90 deg with No Ice (Reduced DL)	86.79	0.424	-0.0674	0.5365	0.5399
101 mph 90 deg with No Ice (Reduced DL)	126.79	0.892	-0.1293	0.7308	0.7411
101 mph 90 deg with No Ice (Reduced DL)	133.21	0.982	-0.1337	0.8275	0.8382
101 mph 90 deg with No Ice (Reduced DL)	166.54	1.521	-0.1346	0.9989	1.0074
101 mph 90 deg with No Ice (Reduced DL)	173.08	1.638	-0.1346	1.0183	1.0271
101 mph 90 deg with No Ice (Reduced DL)	185.49	1.863	-0.1346	0.8244	0.8353
101 mph 90 deg with No Ice (Reduced DL)	190.60	1.955	-0.1346	1.1150	1.1171
101 mph 120 deg with No Ice (Reduced DL)	13.21	0.017	-0.0096	0.1077	0.1078
101 mph 120 deg with No Ice (Reduced DL)	80.00	0.373	-0.0638	0.5316	0.5320
101 mph 120 deg with No Ice (Reduced DL)	86.79	0.437	-0.0745	0.5541	0.5565
101 mph 120 deg with No Ice (Reduced DL)	126.79	0.918	-0.1474	0.7854	0.7904
101 mph 120 deg with No Ice (Reduced DL)	133.21	1.011	-0.1537	0.8493	0.8584
101 mph 120 deg with No Ice (Reduced DL)	166.54	1.566	-0.1758	1.0467	1.0610
101 mph 120 deg with No Ice (Reduced DL)	173.08	1.687	-0.1848	1.0410	1.0570
101 mph 120 deg with No Ice (Reduced DL)	185.49	1.920	-0.2220	0.9641	0.9826
101 mph 120 deg with No Ice (Reduced DL)	190.60	2.014	-0.2281	1.1253	1.1259



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101 mph 180 deg with No Ice (Reduced DL)	13.21	0.016	0.0014	0.1032	0.1032
101 mph 180 deg with No Ice (Reduced DL)	80.00	0.361	0.0117	0.5147	0.5147
101 mph 180 deg with No Ice (Reduced DL)	86.79	0.423	0.0169	0.5398	0.5401
101 mph 180 deg with No Ice (Reduced DL)	126.79	0.892	0.0542	0.8384	0.8401
101 mph 180 deg with No Ice (Reduced DL)	133.21	0.983	0.0558	0.8178	0.8197
101 mph 180 deg with No Ice (Reduced DL)	166.54	1.525	0.0502	1.0673	1.0682
101 mph 180 deg with No Ice (Reduced DL)	173.08	1.643	0.0505	1.0117	1.0129
101 mph 180 deg with No Ice (Reduced DL)	185.49	1.870	0.0508	1.2073	1.2084
101 mph 180 deg with No Ice (Reduced DL)	190.60	1.963	0.0502	1.0039	1.0039
101 mph 210 deg with No Ice (Reduced DL)	13.21	0.016	0.0060	0.1069	0.1070
101 mph 210 deg with No Ice (Reduced DL)	80.00	0.363	0.0416	0.5149	0.5152
101 mph 210 deg with No Ice (Reduced DL)	86.79	0.426	0.0488	0.5436	0.5437
101 mph 210 deg with No Ice (Reduced DL)	126.79	0.898	0.0985	0.8220	0.8234
101 mph 210 deg with No Ice (Reduced DL)	133.21	0.989	0.1030	0.8300	0.8315
101 mph 210 deg with No Ice (Reduced DL)	166.54	1.534	0.1243	1.0577	1.0650
101 mph 210 deg with No Ice (Reduced DL)	173.08	1.652	0.1330	1.0257	1.0284
101 mph 210 deg with No Ice (Reduced DL)	185.49	1.881	0.1692	1.1397	1.1451
101 mph 210 deg with No Ice (Reduced DL)	190.60	1.974	0.1752	1.0340	1.0485
101 mph 240 deg with No Ice (Reduced DL)	13.21	0.017	0.0096	0.1077	0.1078
101 mph 240 deg with No Ice (Reduced DL)	80.00	0.373	0.0638	0.5316	0.5320
101 mph 240 deg with No Ice (Reduced DL)	86.79	0.437	0.0745	0.5541	0.5565
101 mph 240 deg with No Ice (Reduced DL)	126.79	0.918	0.1474	0.7854	0.7904
101 mph 240 deg with No Ice (Reduced DL)	133.21	1.011	0.1537	0.8493	0.8584
101 mph 240 deg with No Ice (Reduced DL)	166.54	1.566	0.1758	1.0467	1.0610
101 mph 240 deg with No Ice (Reduced DL)	173.08	1.687	0.1848	1.0410	1.0570
101 mph 240 deg with No Ice (Reduced DL)	185.49	1.920	0.2220	0.9641	0.9826
101 mph 240 deg with No Ice (Reduced DL)	190.60	2.014	0.2281	1.1253	1.1259
101 mph 300 deg with No Ice (Reduced DL)	13.21	0.016	0.0067	0.1029	0.1031
101 mph 300 deg with No Ice (Reduced DL)	80.00	0.359	0.0381	0.5122	0.5140
101 mph 300 deg with No Ice (Reduced DL)	86.79	0.421	0.0434	0.5335	0.5359
101 mph 300 deg with No Ice (Reduced DL)	126.79	0.886	0.0784	0.7554	0.7610
101 mph 300 deg with No Ice (Reduced DL)	133.21	0.976	0.0800	0.8182	0.8221
101 mph 300 deg with No Ice (Reduced DL)	166.54	1.512	0.0605	1.0099	1.0195
101 mph 300 deg with No Ice (Reduced DL)	173.08	1.628	0.0518	1.0043	1.0091
101 mph 300 deg with No Ice (Reduced DL)	185.49	1.853	0.0159	0.9290	0.9386
101 mph 300 deg with No Ice (Reduced DL)	190.60	1.944	0.0100	1.0858	1.1023
101 mph 330 deg with No Ice (Reduced DL)	13.21	0.016	0.0033	0.1068	0.1069
101 mph 330 deg with No Ice (Reduced DL)	80.00	0.363	0.0169	0.5151	0.5164
101 mph 330 deg with No Ice (Reduced DL)	86.79	0.426	0.0188	0.5425	0.5445
101 mph 330 deg with No Ice (Reduced DL)	126.79	0.898	0.0311	0.8188	0.8243
101 mph 330 deg with No Ice (Reduced DL)	133.21	0.989	0.0311	0.8271	0.8286
101 mph 330 deg with No Ice (Reduced DL)	166.54	1.534	0.0112	1.0574	1.0656
101 mph 330 deg with No Ice (Reduced DL)	173.08	1.652	0.0025	1.0255	1.0270
101 mph 330 deg with No Ice (Reduced DL)	185.49	1.881	-0.0338	1.1395	1.1433
101 mph 330 deg with No Ice (Reduced DL)	190.60	1.974	-0.0397	1.0345	1.0495
50 mph Normal with 0.75 in Radial Ice	13.21	0.006	0.0005	0.0329	0.0329
50 mph Normal with 0.75 in Radial Ice	80.00	0.104	0.0027	0.1482	0.1482
50 mph Normal with 0.75 in Radial Ice	86.79	0.122	0.0040	0.1551	0.1552
50 mph Normal with 0.75 in Radial Ice	126.79	0.256	0.0136	0.2388	0.2392
50 mph Normal with 0.75 in Radial Ice	133.21	0.282	0.0140	0.2357	0.2361
50 mph Normal with 0.75 in Radial Ice	166.54	0.438	0.0123	0.3053	0.3053
50 mph Normal with 0.75 in Radial Ice	173.08	0.472	0.0122	0.2939	0.2942
50 mph Normal with 0.75 in Radial Ice	185.49	0.538	0.0120	0.3714	0.3716
50 mph Normal with 0.75 in Radial Ice	190.60	0.565	0.0120	0.2803	0.2803
50 mph 60 deg with 0.75 in Radial Ice	13.21	0.006	-0.0021	0.0319	0.0319
50 mph 60 deg with 0.75 in Radial Ice	80.00	0.103	-0.0128	0.1449	0.1452
50 mph 60 deg with 0.75 in Radial Ice	86.79	0.120	-0.0147	0.1511	0.1515
50 mph 60 deg with 0.75 in Radial Ice	126.79	0.251	-0.0275	0.2140	0.2147
50 mph 60 deg with 0.75 in Radial Ice	133.21	0.276	-0.0284	0.2311	0.2325
50 mph 60 deg with 0.75 in Radial Ice	166.54	0.428	-0.0268	0.2884	0.2896
50 mph 60 deg with 0.75 in Radial Ice	173.08	0.461	0.0276	0.2837	0.2848
50 mph 60 deg with 0.75 in Radial Ice	185.49	0.525	0.0314	0.2568	0.2575

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50 mph 60 deg with 0.75 in Radial Ice	190.60	0.551	0.0320	0.3164	0.3180
50 mph 90 deg with 0.75 in Radial Ice	13.21	0.006	-0.0026	0.0325	0.0325
50 mph 90 deg with 0.75 in Radial Ice	80.00	0.103	-0.0159	0.1442	0.1444
50 mph 90 deg with 0.75 in Radial Ice	86.79	0.120	-0.0183	0.1511	0.1520
50 mph 90 deg with 0.75 in Radial Ice	126.79	0.251	-0.0348	0.2069	0.2092
50 mph 90 deg with 0.75 in Radial Ice	133.21	0.277	-0.0361	0.2327	0.2355
50 mph 90 deg with 0.75 in Radial Ice	166.54	0.428	-0.0363	0.2849	0.2864
50 mph 90 deg with 0.75 in Radial Ice	173.08	0.462	-0.0363	0.2867	0.2890
50 mph 90 deg with 0.75 in Radial Ice	185.49	0.526	-0.0362	0.2086	0.2117
50 mph 90 deg with 0.75 in Radial Ice	190.60	0.552	-0.0361	0.3295	0.3300
50 mph 120 deg with 0.75 in Radial Ice	13.21	0.006	-0.0023	0.0329	0.0329
50 mph 120 deg with 0.75 in Radial Ice	80.00	0.104	-0.0148	0.1476	0.1478
50 mph 120 deg with 0.75 in Radial Ice	86.79	0.121	-0.0171	0.1537	0.1541
50 mph 120 deg with 0.75 in Radial Ice	126.79	0.255	-0.0329	0.2179	0.2186
50 mph 120 deg with 0.75 in Radial Ice	133.21	0.280	-0.0342	0.2357	0.2374
50 mph 120 deg with 0.75 in Radial Ice	166.54	0.434	-0.0363	0.2928	0.2945
50 mph 120 deg with 0.75 in Radial Ice	173.08	0.468	-0.0372	0.2901	0.2924
50 mph 120 deg with 0.75 in Radial Ice	185.49	0.534	-0.0411	0.2613	0.2616
50 mph 120 deg with 0.75 in Radial Ice	190.60	0.560	-0.0417	0.3226	0.3228
50 mph 180 deg with 0.75 in Radial Ice	13.21	0.006	0.0005	0.0320	0.0320
50 mph 180 deg with 0.75 in Radial Ice	80.00	0.103	0.0028	0.1455	0.1455
50 mph 180 deg with 0.75 in Radial Ice	86.79	0.120	0.0041	0.1527	0.1527
50 mph 180 deg with 0.75 in Radial Ice	126.79	0.252	0.0137	0.2351	0.2355
50 mph 180 deg with 0.75 in Radial Ice	133.21	0.278	0.0142	0.2313	0.2318
50 mph 180 deg with 0.75 in Radial Ice	166.54	0.431	0.0125	0.3009	0.3009
50 mph 180 deg with 0.75 in Radial Ice	173.08	0.465	0.0125	0.2875	0.2878
50 mph 180 deg with 0.75 in Radial Ice	185.49	0.530	0.0124	0.3665	0.3667
50 mph 180 deg with 0.75 in Radial Ice	190.60	0.556	0.0123	0.2741	0.2741
50 mph 210 deg with 0.75 in Radial Ice	13.21	0.006	0.0014	0.0325	0.0325
50 mph 210 deg with 0.75 in Radial Ice	80.00	0.103	0.0089	0.1452	0.1452
50 mph 210 deg with 0.75 in Radial Ice	86.79	0.121	0.0103	0.1530	0.1530
50 mph 210 deg with 0.75 in Radial Ice	126.79	0.253	0.0200	0.2299	0.2300
50 mph 210 deg with 0.75 in Radial Ice	133.21	0.279	0.0208	0.2337	0.2338
50 mph 210 deg with 0.75 in Radial Ice	166.54	0.432	0.0229	0.2980	0.2988
50 mph 210 deg with 0.75 in Radial Ice	173.08	0.466	0.0237	0.2909	0.2910
50 mph 210 deg with 0.75 in Radial Ice	185.49	0.531	0.0277	0.3377	0.3379
50 mph 210 deg with 0.75 in Radial Ice	190.60	0.557	0.0282	0.2891	0.2894
50 mph 240 deg with 0.75 in Radial Ice	13.21	0.006	0.0023	0.0329	0.0329
50 mph 240 deg with 0.75 in Radial Ice	80.00	0.104	0.0148	0.1476	0.1478
50 mph 240 deg with 0.75 in Radial Ice	86.79	0.121	0.0171	0.1537	0.1541
50 mph 240 deg with 0.75 in Radial Ice	126.79	0.255	0.0329	0.2179	0.2186
50 mph 240 deg with 0.75 in Radial Ice	133.21	0.280	0.0342	0.2357	0.2374
50 mph 240 deg with 0.75 in Radial Ice	166.54	0.434	0.0363	0.2928	0.2945
50 mph 240 deg with 0.75 in Radial Ice	173.08	0.468	0.0372	0.2901	0.2924
50 mph 240 deg with 0.75 in Radial Ice	185.49	0.534	0.0411	0.2613	0.2616
50 mph 240 deg with 0.75 in Radial Ice	190.60	0.560	0.0417	0.3226	0.3228
50 mph 300 deg with 0.75 in Radial Ice	13.21	0.006	0.0021	0.0319	0.0319
50 mph 300 deg with 0.75 in Radial Ice	80.00	0.103	0.0128	0.1449	0.1452
50 mph 300 deg with 0.75 in Radial Ice	86.79	0.120	0.0147	0.1511	0.1515
50 mph 300 deg with 0.75 in Radial Ice	126.79	0.251	0.0275	0.2140	0.2147
50 mph 300 deg with 0.75 in Radial Ice	133.21	0.276	0.0284	0.2311	0.2325
50 mph 300 deg with 0.75 in Radial Ice	166.54	0.428	0.0268	0.2884	0.2896
50 mph 300 deg with 0.75 in Radial Ice	173.08	0.461	0.0258	0.2837	0.2848
50 mph 300 deg with 0.75 in Radial Ice	185.49	0.525	0.0218	0.2568	0.2575
50 mph 300 deg with 0.75 in Radial Ice	190.60	0.551	0.0211	0.3164	0.3180
50 mph 330 deg with 0.75 in Radial Ice	13.21	0.006	0.0012	0.0325	0.0325
50 mph 330 deg with 0.75 in Radial Ice	80.00	0.103	0.0070	0.1449	0.1451
50 mph 330 deg with 0.75 in Radial Ice	86.79	0.121	0.0080	0.1529	0.1530
50 mph 330 deg with 0.75 in Radial Ice	126.79	0.253	0.0148	0.2297	0.2302
50 mph 330 deg with 0.75 in Radial Ice	133.21	0.279	0.0152	0.2335	0.2335
50 mph 330 deg with 0.75 in Radial Ice	166.54	0.432	0.0135	0.2979	0.2989
50 mph 330 deg with 0.75 in Radial Ice	173.08	0.466	0.0126	0.2909	0.2909

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50 mph 330 deg with 0.75 in Radial Ice	185.49	0.531	0.0085	0.3378	0.3379
50 mph 330 deg with 0.75 in Radial Ice	190.60	0.557	0.0079	0.2892	0.2894
Seismic Normal M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic Normal M1	80.00	0.014	0.0007	0.0213	0.0213
Seismic Normal M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic Normal M1	126.79	0.037	0.0011	0.0350	0.0350
Seismic Normal M1	133.21	0.041	0.0011	0.0375	0.0375
Seismic Normal M1	166.54	0.067	0.0011	0.0506	0.0506
Seismic Normal M1	173.08	0.072	0.0011	0.0497	0.0497
Seismic Normal M1	185.49	0.083	0.0010	0.0483	0.0483
Seismic Normal M1	190.60	0.088	0.0009	0.0520	0.0520
Seismic Normal M2	13.21	0.000	0.0001	0.0024	0.0024
Seismic Normal M2	80.00	0.010	0.0005	0.0146	0.0146
Seismic Normal M2	86.79	0.011	0.0005	0.0158	0.0158
Seismic Normal M2	126.79	0.026	0.0008	0.0262	0.0262
Seismic Normal M2	133.21	0.029	0.0008	0.0283	0.0283
Seismic Normal M2	166.54	0.049	0.0008	0.0415	0.0415
Seismic Normal M2	173.08	0.054	0.0008	0.0403	0.0404
Seismic Normal M2	185.49	0.063	0.0007	0.0392	0.0392
Seismic Normal M2	190.60	0.067	0.0007	0.0433	0.0433
Seismic 60 deg M1	13.21	0.000	-0.0001	0.0035	0.0035
Seismic 60 deg M1	80.00	0.014	-0.0007	0.0212	0.0212
Seismic 60 deg M1	86.79	0.017	-0.0008	0.0227	0.0227
Seismic 60 deg M1	126.79	0.037	-0.0011	0.0350	0.0350
Seismic 60 deg M1	133.21	0.041	-0.0011	0.0373	0.0373
Seismic 60 deg M1	166.54	0.067	-0.0011	0.0503	0.0503
Seismic 60 deg M1	173.08	0.072	-0.0011	0.0495	0.0495
Seismic 60 deg M1	185.49	0.083	-0.0010	0.0487	0.0487
Seismic 60 deg M1	190.60	0.088	-0.0009	0.0520	0.0520
Seismic 60 deg M2	13.21	0.000	0.0001	0.0024	0.0024
Seismic 60 deg M2	80.00	0.009	0.0004	0.0142	0.0142
Seismic 60 deg M2	86.79	0.011	0.0005	0.0155	0.0156
Seismic 60 deg M2	126.79	0.025	-0.0007	0.0257	0.0257
Seismic 60 deg M2	133.21	0.029	-0.0008	0.0277	0.0277
Seismic 60 deg M2	166.54	0.048	-0.0008	0.0405	0.0405
Seismic 60 deg M2	173.08	0.053	-0.0007	0.0395	0.0395
Seismic 60 deg M2	185.49	0.062	-0.0006	0.0389	0.0389
Seismic 60 deg M2	190.60	0.065	-0.0006	0.0425	0.0425
Seismic 90 deg M1	13.21	0.001	-0.0002	0.0036	0.0036
Seismic 90 deg M1	80.00	0.014	-0.0008	0.0211	0.0211
Seismic 90 deg M1	86.79	0.017	-0.0009	0.0227	0.0227
Seismic 90 deg M1	126.79	0.037	-0.0013	0.0350	0.0350
Seismic 90 deg M1	133.21	0.041	-0.0013	0.0376	0.0376
Seismic 90 deg M1	166.54	0.067	-0.0013	0.0504	0.0504
Seismic 90 deg M1	173.08	0.072	-0.0012	0.0502	0.0502
Seismic 90 deg M1	185.49	0.083	-0.0011	0.0488	0.0488
Seismic 90 deg M1	190.60	0.088	-0.0011	0.0520	0.0520
Seismic 90 deg M2	13.21	0.000	-0.0001	0.0024	0.0024
Seismic 90 deg M2	80.00	0.010	-0.0005	0.0145	0.0145
Seismic 90 deg M2	86.79	0.011	-0.0006	0.0158	0.0158
Seismic 90 deg M2	126.79	0.026	-0.0009	0.0262	0.0262
Seismic 90 deg M2	133.21	0.029	-0.0009	0.0284	0.0284
Seismic 90 deg M2	166.54	0.049	-0.0009	0.0413	0.0413
Seismic 90 deg M2	173.08	0.054	-0.0009	0.0409	0.0409
Seismic 90 deg M2	185.49	0.063	-0.0008	0.0397	0.0397
Seismic 90 deg M2	190.60	0.067	-0.0008	0.0432	0.0432
Seismic 120 deg M1	13.21	0.001	-0.0001	0.0036	0.0036
Seismic 120 deg M1	80.00	0.014	-0.0007	0.0213	0.0213
Seismic 120 deg M1	86.79	0.017	-0.0008	0.0227	0.0227
Seismic 120 deg M1	126.79	0.037	-0.0011	0.0350	0.0350
Seismic 120 deg M1	133.21	0.041	-0.0011	0.0375	0.0375
Seismic 120 deg M1	166.54	0.067	-0.0011	0.0506	0.0506



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Seismic 120 deg M1	173.08	0.072	-0.0011	0.0497	0.0497
Seismic 120 deg M1	185.49	0.083	-0.0010	0.0483	0.0483
Seismic 120 deg M1	190.60	0.088	-0.0009	0.0520	0.0520
Seismic 120 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic 120 deg M2	80.00	0.009	0.0004	0.0143	0.0143
Seismic 120 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic 120 deg M2	126.79	0.026	-0.0007	0.0258	0.0258
Seismic 120 deg M2	133.21	0.029	-0.0008	0.0279	0.0279
Seismic 120 deg M2	166.54	0.048	-0.0008	0.0408	0.0408
Seismic 120 deg M2	173.08	0.053	-0.0007	0.0397	0.0397
Seismic 120 deg M2	185.49	0.062	-0.0006	0.0385	0.0385
Seismic 120 deg M2	190.60	0.065	-0.0006	0.0426	0.0426
Seismic 180 deg M1	13.21	0.000	0.0001	0.0035	0.0035
Seismic 180 deg M1	80.00	0.014	0.0007	0.0212	0.0212
Seismic 180 deg M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic 180 deg M1	126.79	0.037	0.0011	0.0350	0.0350
Seismic 180 deg M1	133.21	0.041	0.0011	0.0373	0.0373
Seismic 180 deg M1	166.54	0.067	0.0011	0.0503	0.0503
Seismic 180 deg M1	173.08	0.072	0.0011	0.0495	0.0495
Seismic 180 deg M1	185.49	0.083	0.0010	0.0487	0.0487
Seismic 180 deg M1	190.60	0.088	0.0009	0.0520	0.0520
Seismic 180 deg M2	13.21	0.000	0.0001	0.0024	0.0024
Seismic 180 deg M2	80.00	0.010	0.0005	0.0145	0.0145
Seismic 180 deg M2	86.79	0.011	0.0005	0.0158	0.0158
Seismic 180 deg M2	126.79	0.026	0.0008	0.0262	0.0262
Seismic 180 deg M2	133.21	0.029	0.0008	0.0281	0.0281
Seismic 180 deg M2	166.54	0.049	0.0008	0.0411	0.0411
Seismic 180 deg M2	173.08	0.054	0.0008	0.0401	0.0401
Seismic 180 deg M2	185.49	0.063	0.0007	0.0395	0.0395
Seismic 180 deg M2	190.60	0.067	0.0007	0.0433	0.0433
Seismic 210 deg M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic 210 deg M1	80.00	0.014	0.0004	0.0211	0.0211
Seismic 210 deg M1	86.79	0.017	0.0004	0.0227	0.0227
Seismic 210 deg M1	126.79	0.037	0.0006	0.0350	0.0350
Seismic 210 deg M1	133.21	0.041	0.0007	0.0376	0.0376
Seismic 210 deg M1	166.54	0.067	0.0006	0.0504	0.0504
Seismic 210 deg M1	173.08	0.072	0.0006	0.0502	0.0502
Seismic 210 deg M1	185.49	0.083	0.0006	0.0488	0.0488
Seismic 210 deg M1	190.60	0.088	0.0005	0.0520	0.0520
Seismic 210 deg M2	13.21	0.000	0.0000	0.0024	0.0024
Seismic 210 deg M2	80.00	0.009	0.0003	0.0142	0.0142
Seismic 210 deg M2	86.79	0.011	0.0003	0.0156	0.0156
Seismic 210 deg M2	126.79	0.026	0.0004	0.0258	0.0258
Seismic 210 deg M2	133.21	0.029	0.0005	0.0279	0.0279
Seismic 210 deg M2	166.54	0.048	0.0004	0.0406	0.0406
Seismic 210 deg M2	173.08	0.053	0.0004	0.0402	0.0402
Seismic 210 deg M2	185.49	0.062	0.0004	0.0391	0.0391
Seismic 210 deg M2	190.60	0.065	0.0003	0.0425	0.0425
Seismic 240 deg M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic 240 deg M1	80.00	0.014	0.0007	0.0213	0.0213
Seismic 240 deg M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic 240 deg M1	126.79	0.037	0.0011	0.0350	0.0350
Seismic 240 deg M1	133.21	0.041	0.0011	0.0375	0.0375
Seismic 240 deg M1	166.54	0.067	0.0011	0.0506	0.0506
Seismic 240 deg M1	173.08	0.072	0.0011	0.0497	0.0497
Seismic 240 deg M1	185.49	0.083	0.0010	0.0483	0.0483
Seismic 240 deg M1	190.60	0.088	0.0009	0.0520	0.0520
Seismic 240 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic 240 deg M2	80.00	0.009	0.0004	0.0143	0.0143
Seismic 240 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic 240 deg M2	126.79	0.026	0.0007	0.0258	0.0258
Seismic 240 deg M2	133.21	0.029	0.0008	0.0279	0.0279

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Seismic 240 deg M2	166.54	0.048	0.0008	0.0408	0.0408
Seismic 240 deg M2	173.08	0.053	0.0007	0.0397	0.0397
Seismic 240 deg M2	185.49	0.062	0.0006	0.0385	0.0385
Seismic 240 deg M2	190.60	0.065	0.0006	0.0426	0.0426
Seismic 300 deg M1	13.21	0.000	0.0001	0.0035	0.0035
Seismic 300 deg M1	80.00	0.014	0.0007	0.0212	0.0212
Seismic 300 deg M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic 300 deg M1	126.79	0.037	0.0011	0.0350	0.0350
Seismic 300 deg M1	133.21	0.041	0.0011	0.0373	0.0373
Seismic 300 deg M1	166.54	0.067	0.0011	0.0503	0.0503
Seismic 300 deg M1	173.08	0.072	0.0011	0.0495	0.0495
Seismic 300 deg M1	185.49	0.083	0.0010	0.0487	0.0487
Seismic 300 deg M1	190.60	0.088	0.0009	0.0520	0.0520
Seismic 300 deg M2	13.21	0.000	0.0001	0.0024	0.0024
Seismic 300 deg M2	80.00	0.009	0.0004	0.0142	0.0142
Seismic 300 deg M2	86.79	0.011	0.0005	0.0155	0.0156
Seismic 300 deg M2	126.79	0.025	0.0007	0.0257	0.0257
Seismic 300 deg M2	133.21	0.029	0.0008	0.0277	0.0277
Seismic 300 deg M2	166.54	0.048	0.0008	0.0405	0.0405
Seismic 300 deg M2	173.08	0.053	0.0007	0.0395	0.0395
Seismic 300 deg M2	185.49	0.062	0.0006	0.0389	0.0389
Seismic 300 deg M2	190.60	0.065	0.0006	0.0425	0.0425
Seismic 330 deg M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic 330 deg M1	80.00	0.014	0.0004	0.0211	0.0211
Seismic 330 deg M1	86.79	0.017	0.0004	0.0227	0.0227
Seismic 330 deg M1	126.79	0.037	0.0006	0.0350	0.0350
Seismic 330 deg M1	133.21	0.041	0.0007	0.0376	0.0376
Seismic 330 deg M1	166.54	0.067	0.0006	0.0504	0.0504
Seismic 330 deg M1	173.08	0.072	0.0006	0.0502	0.0502
Seismic 330 deg M1	185.49	0.083	0.0006	0.0488	0.0488
Seismic 330 deg M1	190.60	0.088	0.0005	0.0520	0.0520
Seismic 330 deg M2	13.21	0.000	0.0000	0.0024	0.0024
Seismic 330 deg M2	80.00	0.009	0.0003	0.0142	0.0142
Seismic 330 deg M2	86.79	0.011	0.0003	0.0156	0.0156
Seismic 330 deg M2	126.79	0.026	0.0004	0.0258	0.0258
Seismic 330 deg M2	133.21	0.029	0.0005	0.0279	0.0279
Seismic 330 deg M2	166.54	0.048	0.0004	0.0406	0.0406
Seismic 330 deg M2	173.08	0.053	0.0004	0.0402	0.0402
Seismic 330 deg M2	185.49	0.062	0.0004	0.0391	0.0391
Seismic 330 deg M2	190.60	0.065	0.0003	0.0425	0.0425
Seismic (Reduced DL) Normal M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic (Reduced DL) Normal M1	80.00	0.014	0.0007	0.0213	0.0213
Seismic (Reduced DL) Normal M1	86.79	0.017	0.0008	0.0226	0.0227
Seismic (Reduced DL) Normal M1	126.79	0.037	0.0011	0.0349	0.0350
Seismic (Reduced DL) Normal M1	133.21	0.041	0.0011	0.0374	0.0374
Seismic (Reduced DL) Normal M1	166.54	0.067	0.0011	0.0504	0.0504
Seismic (Reduced DL) Normal M1	173.08	0.072	0.0011	0.0496	0.0496
Seismic (Reduced DL) Normal M1	185.49	0.083	0.0010	0.0483	0.0483
Seismic (Reduced DL) Normal M1	190.60	0.088	0.0009	0.0518	0.0519
Seismic (Reduced DL) Normal M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) Normal M2	80.00	0.010	0.0004	0.0145	0.0145
Seismic (Reduced DL) Normal M2	86.79	0.011	0.0005	0.0158	0.0158
Seismic (Reduced DL) Normal M2	126.79	0.026	0.0008	0.0261	0.0261
Seismic (Reduced DL) Normal M2	133.21	0.029	0.0008	0.0282	0.0283
Seismic (Reduced DL) Normal M2	166.54	0.049	0.0008	0.0413	0.0413
Seismic (Reduced DL) Normal M2	173.08	0.054	0.0008	0.0402	0.0402
Seismic (Reduced DL) Normal M2	185.49	0.063	0.0007	0.0391	0.0391
Seismic (Reduced DL) Normal M2	190.60	0.066	0.0007	0.0432	0.0432
Seismic (Reduced DL) 60 deg M1	13.21	0.000	-0.0001	0.0035	0.0035
Seismic (Reduced DL) 60 deg M1	80.00	0.014	-0.0007	0.0212	0.0212
Seismic (Reduced DL) 60 deg M1	86.79	0.017	-0.0008	0.0227	0.0227
Seismic (Reduced DL) 60 deg M1	126.79	0.037	-0.0011	0.0349	0.0349

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Seismic (Reduced DL) 60 deg M1	133.21	0.041	-0.0011	0.0372	0.0373
Seismic (Reduced DL) 60 deg M1	166.54	0.066	-0.0011	0.0502	0.0502
Seismic (Reduced DL) 60 deg M1	173.08	0.072	-0.0011	0.0494	0.0494
Seismic (Reduced DL) 60 deg M1	185.49	0.083	-0.0010	0.0485	0.0486
Seismic (Reduced DL) 60 deg M1	190.60	0.088	-0.0009	0.0519	0.0519
Seismic (Reduced DL) 60 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) 60 deg M2	80.00	0.009	0.0004	0.0142	0.0142
Seismic (Reduced DL) 60 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic (Reduced DL) 60 deg M2	126.79	0.025	-0.0007	0.0257	0.0257
Seismic (Reduced DL) 60 deg M2	133.21	0.028	-0.0008	0.0276	0.0276
Seismic (Reduced DL) 60 deg M2	166.54	0.048	-0.0008	0.0404	0.0404
Seismic (Reduced DL) 60 deg M2	173.08	0.053	-0.0007	0.0394	0.0395
Seismic (Reduced DL) 60 deg M2	185.49	0.062	-0.0006	0.0388	0.0388
Seismic (Reduced DL) 60 deg M2	190.60	0.065	-0.0006	0.0425	0.0425
Seismic (Reduced DL) 90 deg M1	13.21	0.001	-0.0002	0.0035	0.0036
Seismic (Reduced DL) 90 deg M1	80.00	0.014	-0.0008	0.0211	0.0211
Seismic (Reduced DL) 90 deg M1	86.79	0.017	-0.0009	0.0227	0.0227
Seismic (Reduced DL) 90 deg M1	126.79	0.037	-0.0013	0.0349	0.0350
Seismic (Reduced DL) 90 deg M1	133.21	0.041	-0.0013	0.0375	0.0375
Seismic (Reduced DL) 90 deg M1	166.54	0.067	-0.0013	0.0502	0.0502
Seismic (Reduced DL) 90 deg M1	173.08	0.072	-0.0012	0.0501	0.0501
Seismic (Reduced DL) 90 deg M1	185.49	0.083	-0.0011	0.0487	0.0487
Seismic (Reduced DL) 90 deg M1	190.60	0.088	-0.0011	0.0519	0.0519
Seismic (Reduced DL) 90 deg M2	13.21	0.000	-0.0001	0.0023	0.0023
Seismic (Reduced DL) 90 deg M2	80.00	0.010	-0.0005	0.0144	0.0144
Seismic (Reduced DL) 90 deg M2	86.79	0.011	-0.0006	0.0158	0.0158
Seismic (Reduced DL) 90 deg M2	126.79	0.026	-0.0009	0.0261	0.0262
Seismic (Reduced DL) 90 deg M2	133.21	0.029	-0.0009	0.0283	0.0283
Seismic (Reduced DL) 90 deg M2	166.54	0.049	-0.0009	0.0411	0.0411
Seismic (Reduced DL) 90 deg M2	173.08	0.054	-0.0009	0.0408	0.0408
Seismic (Reduced DL) 90 deg M2	185.49	0.063	-0.0008	0.0396	0.0397
Seismic (Reduced DL) 90 deg M2	190.60	0.066	-0.0008	0.0431	0.0431
Seismic (Reduced DL) 120 deg M1	13.21	0.001	-0.0001	0.0036	0.0036
Seismic (Reduced DL) 120 deg M1	80.00	0.014	-0.0007	0.0213	0.0213
Seismic (Reduced DL) 120 deg M1	86.79	0.017	-0.0008	0.0226	0.0227
Seismic (Reduced DL) 120 deg M1	126.79	0.037	-0.0011	0.0349	0.0350
Seismic (Reduced DL) 120 deg M1	133.21	0.041	-0.0011	0.0374	0.0374
Seismic (Reduced DL) 120 deg M1	166.54	0.067	-0.0011	0.0504	0.0504
Seismic (Reduced DL) 120 deg M1	173.08	0.072	-0.0011	0.0496	0.0496
Seismic (Reduced DL) 120 deg M1	185.49	0.083	-0.0010	0.0483	0.0483
Seismic (Reduced DL) 120 deg M1	190.60	0.088	-0.0009	0.0519	0.0519
Seismic (Reduced DL) 120 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) 120 deg M2	80.00	0.009	0.0004	0.0143	0.0143
Seismic (Reduced DL) 120 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic (Reduced DL) 120 deg M2	126.79	0.026	-0.0007	0.0257	0.0257
Seismic (Reduced DL) 120 deg M2	133.21	0.029	-0.0008	0.0278	0.0278
Seismic (Reduced DL) 120 deg M2	166.54	0.048	-0.0008	0.0407	0.0407
Seismic (Reduced DL) 120 deg M2	173.08	0.053	-0.0007	0.0396	0.0396
Seismic (Reduced DL) 120 deg M2	185.49	0.062	-0.0006	0.0385	0.0385
Seismic (Reduced DL) 120 deg M2	190.60	0.065	-0.0006	0.0425	0.0425
Seismic (Reduced DL) 180 deg M1	13.21	0.000	0.0001	0.0035	0.0035
Seismic (Reduced DL) 180 deg M1	80.00	0.014	0.0007	0.0212	0.0212
Seismic (Reduced DL) 180 deg M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic (Reduced DL) 180 deg M1	126.79	0.037	0.0011	0.0349	0.0349
Seismic (Reduced DL) 180 deg M1	133.21	0.041	0.0011	0.0372	0.0373
Seismic (Reduced DL) 180 deg M1	166.54	0.066	0.0011	0.0502	0.0502
Seismic (Reduced DL) 180 deg M1	173.08	0.072	0.0011	0.0494	0.0494
Seismic (Reduced DL) 180 deg M1	185.49	0.083	0.0010	0.0485	0.0485
Seismic (Reduced DL) 180 deg M1	190.60	0.088	0.0009	0.0519	0.0519
Seismic (Reduced DL) 180 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) 180 deg M2	80.00	0.009	0.0004	0.0144	0.0144
Seismic (Reduced DL) 180 deg M2	86.79	0.011	0.0005	0.0158	0.0158



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Seismic (Reduced DL) 180 deg M2	126.79	0.026	0.0008	0.0261	0.0261
Seismic (Reduced DL) 180 deg M2	133.21	0.029	0.0008	0.0281	0.0281
Seismic (Reduced DL) 180 deg M2	166.54	0.049	0.0008	0.0411	0.0411
Seismic (Reduced DL) 180 deg M2	173.08	0.054	0.0008	0.0401	0.0401
Seismic (Reduced DL) 180 deg M2	185.49	0.063	0.0007	0.0394	0.0394
Seismic (Reduced DL) 180 deg M2	190.60	0.066	0.0007	0.0432	0.0432
Seismic (Reduced DL) 210 deg M1	13.21	0.001	0.0001	0.0035	0.0036
Seismic (Reduced DL) 210 deg M1	80.00	0.014	0.0004	0.0211	0.0211
Seismic (Reduced DL) 210 deg M1	86.79	0.017	0.0004	0.0227	0.0227
Seismic (Reduced DL) 210 deg M1	126.79	0.037	0.0006	0.0349	0.0350
Seismic (Reduced DL) 210 deg M1	133.21	0.041	0.0007	0.0375	0.0375
Seismic (Reduced DL) 210 deg M1	166.54	0.067	0.0006	0.0502	0.0502
Seismic (Reduced DL) 210 deg M1	173.08	0.072	0.0006	0.0501	0.0501
Seismic (Reduced DL) 210 deg M1	185.49	0.083	0.0005	0.0487	0.0487
Seismic (Reduced DL) 210 deg M1	190.60	0.088	0.0005	0.0519	0.0519
Seismic (Reduced DL) 210 deg M2	13.21	0.000	0.0000	0.0023	0.0023
Seismic (Reduced DL) 210 deg M2	80.00	0.009	0.0003	0.0142	0.0142
Seismic (Reduced DL) 210 deg M2	86.79	0.011	0.0003	0.0155	0.0155
Seismic (Reduced DL) 210 deg M2	126.79	0.025	0.0004	0.0257	0.0257
Seismic (Reduced DL) 210 deg M2	133.21	0.028	0.0005	0.0278	0.0279
Seismic (Reduced DL) 210 deg M2	166.54	0.048	0.0004	0.0405	0.0405
Seismic (Reduced DL) 210 deg M2	173.08	0.053	0.0004	0.0402	0.0402
Seismic (Reduced DL) 210 deg M2	185.49	0.062	0.0004	0.0390	0.0390
Seismic (Reduced DL) 210 deg M2	190.60	0.065	0.0003	0.0424	0.0424
Seismic (Reduced DL) 240 deg M1	13.21	0.001	0.0001	0.0036	0.0036
Seismic (Reduced DL) 240 deg M1	80.00	0.014	0.0007	0.0213	0.0213
Seismic (Reduced DL) 240 deg M1	86.79	0.017	0.0008	0.0226	0.0227
Seismic (Reduced DL) 240 deg M1	126.79	0.037	0.0011	0.0349	0.0350
Seismic (Reduced DL) 240 deg M1	133.21	0.041	0.0011	0.0374	0.0374
Seismic (Reduced DL) 240 deg M1	166.54	0.067	0.0011	0.0504	0.0504
Seismic (Reduced DL) 240 deg M1	173.08	0.072	0.0011	0.0496	0.0496
Seismic (Reduced DL) 240 deg M1	185.49	0.083	0.0010	0.0483	0.0483
Seismic (Reduced DL) 240 deg M1	190.60	0.088	0.0009	0.0519	0.0519
Seismic (Reduced DL) 240 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) 240 deg M2	80.00	0.009	0.0004	0.0143	0.0143
Seismic (Reduced DL) 240 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic (Reduced DL) 240 deg M2	126.79	0.026	0.0007	0.0257	0.0257
Seismic (Reduced DL) 240 deg M2	133.21	0.029	0.0008	0.0278	0.0278
Seismic (Reduced DL) 240 deg M2	166.54	0.048	0.0008	0.0407	0.0407
Seismic (Reduced DL) 240 deg M2	173.08	0.053	0.0007	0.0396	0.0396
Seismic (Reduced DL) 240 deg M2	185.49	0.062	0.0006	0.0385	0.0385
Seismic (Reduced DL) 240 deg M2	190.60	0.065	0.0006	0.0425	0.0425
Seismic (Reduced DL) 300 deg M1	13.21	0.000	0.0001	0.0035	0.0035
Seismic (Reduced DL) 300 deg M1	80.00	0.014	0.0007	0.0212	0.0212
Seismic (Reduced DL) 300 deg M1	86.79	0.017	0.0008	0.0227	0.0227
Seismic (Reduced DL) 300 deg M1	126.79	0.037	0.0011	0.0349	0.0349
Seismic (Reduced DL) 300 deg M1	133.21	0.041	0.0011	0.0372	0.0373
Seismic (Reduced DL) 300 deg M1	166.54	0.066	0.0011	0.0502	0.0502
Seismic (Reduced DL) 300 deg M1	173.08	0.072	0.0011	0.0494	0.0494
Seismic (Reduced DL) 300 deg M1	185.49	0.083	0.0010	0.0485	0.0486
Seismic (Reduced DL) 300 deg M1	190.60	0.088	0.0009	0.0519	0.0519
Seismic (Reduced DL) 300 deg M2	13.21	0.000	0.0001	0.0023	0.0023
Seismic (Reduced DL) 300 deg M2	80.00	0.009	0.0004	0.0142	0.0142
Seismic (Reduced DL) 300 deg M2	86.79	0.011	0.0005	0.0155	0.0155
Seismic (Reduced DL) 300 deg M2	126.79	0.025	0.0007	0.0257	0.0257
Seismic (Reduced DL) 300 deg M2	133.21	0.028	0.0008	0.0276	0.0276
Seismic (Reduced DL) 300 deg M2	166.54	0.048	0.0008	0.0404	0.0404
Seismic (Reduced DL) 300 deg M2	173.08	0.053	0.0007	0.0394	0.0395
Seismic (Reduced DL) 300 deg M2	185.49	0.062	0.0006	0.0388	0.0388
Seismic (Reduced DL) 300 deg M2	190.60	0.065	0.0006	0.0425	0.0425
Seismic (Reduced DL) 330 deg M1	13.21	0.001	0.0001	0.0035	0.0036
Seismic (Reduced DL) 330 deg M1	80.00	0.014	0.0004	0.0211	0.0211

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Seismic (Reduced DL) 330 deg M1	86.79	0.017	0.0004	0.0227	0.0227
Seismic (Reduced DL) 330 deg M1	126.79	0.037	0.0006	0.0349	0.0350
Seismic (Reduced DL) 330 deg M1	133.21	0.041	0.0007	0.0375	0.0375
Seismic (Reduced DL) 330 deg M1	166.54	0.067	0.0006	0.0502	0.0502
Seismic (Reduced DL) 330 deg M1	173.08	0.072	0.0006	0.0501	0.0501
Seismic (Reduced DL) 330 deg M1	185.49	0.083	0.0005	0.0487	0.0487
Seismic (Reduced DL) 330 deg M1	190.60	0.088	0.0005	0.0519	0.0519
Seismic (Reduced DL) 330 deg M2	13.21	0.000	0.0000	0.0023	0.0023
Seismic (Reduced DL) 330 deg M2	80.00	0.009	0.0003	0.0142	0.0142
Seismic (Reduced DL) 330 deg M2	86.79	0.011	0.0003	0.0155	0.0155
Seismic (Reduced DL) 330 deg M2	126.79	0.025	0.0004	0.0257	0.0257
Seismic (Reduced DL) 330 deg M2	133.21	0.028	0.0005	0.0278	0.0279
Seismic (Reduced DL) 330 deg M2	166.54	0.048	0.0004	0.0405	0.0405
Seismic (Reduced DL) 330 deg M2	173.08	0.053	0.0004	0.0402	0.0402
Seismic (Reduced DL) 330 deg M2	185.49	0.062	0.0004	0.0390	0.0390
Seismic (Reduced DL) 330 deg M2	190.60	0.065	0.0003	0.0424	0.0424
Serviceability - 60 mph Wind Normal	13.21	0.004	0.0004	0.0242	0.0242
Serviceability - 60 mph Wind Normal	80.00	0.084	0.0023	0.1194	0.1194
Serviceability - 60 mph Wind Normal	86.79	0.098	0.0034	0.1249	0.1250
Serviceability - 60 mph Wind Normal	126.79	0.207	0.0115	0.1930	0.1933
Serviceability - 60 mph Wind Normal	133.21	0.228	0.0118	0.1890	0.1893
Serviceability - 60 mph Wind Normal	166.54	0.353	0.0103	0.2455	0.2456
Serviceability - 60 mph Wind Normal	173.08	0.380	0.0102	0.2335	0.2337
Serviceability - 60 mph Wind Normal	185.49	0.432	0.0099	0.2763	0.2765
Serviceability - 60 mph Wind Normal	190.60	0.453	0.0099	0.2322	0.2322
Serviceability - 60 mph Wind 60 deg	13.21	0.004	-0.0017	0.0230	0.0230
Serviceability - 60 mph Wind 60 deg	80.00	0.080	-0.0106	0.1147	0.1150
Serviceability - 60 mph Wind 60 deg	86.79	0.094	-0.0122	0.1195	0.1199
Serviceability - 60 mph Wind 60 deg	126.79	0.198	-0.0230	0.1690	0.1693
Serviceability - 60 mph Wind 60 deg	133.21	0.218	-0.0238	0.1828	0.1840
Serviceability - 60 mph Wind 60 deg	166.54	0.338	-0.0228	0.2252	0.2262
Serviceability - 60 mph Wind 60 deg	173.08	0.364	-0.0223	0.2237	0.2247
Serviceability - 60 mph Wind 60 deg	185.49	0.414	0.0226	0.2068	0.2072
Serviceability - 60 mph Wind 60 deg	190.60	0.434	0.0228	0.2417	0.2428
Serviceability - 60 mph Wind 90 deg	13.21	0.004	-0.0021	0.0239	0.0239
Serviceability - 60 mph Wind 90 deg	80.00	0.081	-0.0129	0.1146	0.1148
Serviceability - 60 mph Wind 90 deg	86.79	0.095	-0.0149	0.1201	0.1209
Serviceability - 60 mph Wind 90 deg	126.79	0.200	-0.0286	0.1636	0.1658
Serviceability - 60 mph Wind 90 deg	133.21	0.220	-0.0296	0.1850	0.1873
Serviceability - 60 mph Wind 90 deg	166.54	0.340	-0.0296	0.2229	0.2247
Serviceability - 60 mph Wind 90 deg	173.08	0.366	-0.0296	0.2271	0.2290
Serviceability - 60 mph Wind 90 deg	185.49	0.416	-0.0294	0.1843	0.1867
Serviceability - 60 mph Wind 90 deg	190.60	0.437	-0.0293	0.2486	0.2490
Serviceability - 60 mph Wind 120 deg	13.21	0.004	-0.0019	0.0242	0.0243
Serviceability - 60 mph Wind 120 deg	80.00	0.084	-0.0119	0.1191	0.1192
Serviceability - 60 mph Wind 120 deg	86.79	0.098	-0.0138	0.1239	0.1243
Serviceability - 60 mph Wind 120 deg	126.79	0.206	-0.0266	0.1754	0.1759
Serviceability - 60 mph Wind 120 deg	133.21	0.226	-0.0276	0.1897	0.1911
Serviceability - 60 mph Wind 120 deg	166.54	0.350	-0.0287	0.2334	0.2351
Serviceability - 60 mph Wind 120 deg	173.08	0.377	-0.0290	0.2325	0.2342
Serviceability - 60 mph Wind 120 deg	185.49	0.429	-0.0307	0.2149	0.2155
Serviceability - 60 mph Wind 120 deg	190.60	0.450	-0.0309	0.2510	0.2513
Serviceability - 60 mph Wind 180 deg	13.21	0.004	0.0003	0.0230	0.0230
Serviceability - 60 mph Wind 180 deg	80.00	0.081	0.0025	0.1151	0.1151
Serviceability - 60 mph Wind 180 deg	86.79	0.094	0.0036	0.1206	0.1207
Serviceability - 60 mph Wind 180 deg	126.79	0.199	0.0117	0.1868	0.1872
Serviceability - 60 mph Wind 180 deg	133.21	0.219	0.0121	0.1823	0.1827
Serviceability - 60 mph Wind 180 deg	166.54	0.340	0.0106	0.2374	0.2374
Serviceability - 60 mph Wind 180 deg	173.08	0.366	0.0105	0.2248	0.2250
Serviceability - 60 mph Wind 180 deg	185.49	0.417	0.0103	0.2681	0.2683
Serviceability - 60 mph Wind 180 deg	190.60	0.438	0.0101	0.2231	0.2231
Serviceability - 60 mph Wind 210 deg	13.21	0.004	0.0011	0.0240	0.0240

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Serviceability - 60 mph Wind 210 deg	80.00	0.081	0.0071	0.1154	0.1155
Serviceability - 60 mph Wind 210 deg	86.79	0.095	0.0082	0.1216	0.1216
Serviceability - 60 mph Wind 210 deg	126.79	0.201	0.0159	0.1833	0.1834
Serviceability - 60 mph Wind 210 deg	133.21	0.221	0.0165	0.1852	0.1853
Serviceability - 60 mph Wind 210 deg	166.54	0.343	0.0174	0.2358	0.2364
Serviceability - 60 mph Wind 210 deg	173.08	0.369	0.0178	0.2287	0.2287
Serviceability - 60 mph Wind 210 deg	185.49	0.420	0.0193	0.2535	0.2536
Serviceability - 60 mph Wind 210 deg	190.60	0.441	0.0195	0.2306	0.2312
Serviceability - 60 mph Wind 240 deg	13.21	0.004	0.0019	0.0242	0.0243
Serviceability - 60 mph Wind 240 deg	80.00	0.084	0.0119	0.1191	0.1192
Serviceability - 60 mph Wind 240 deg	86.79	0.098	0.0138	0.1239	0.1243
Serviceability - 60 mph Wind 240 deg	126.79	0.206	0.0266	0.1754	0.1759
Serviceability - 60 mph Wind 240 deg	133.21	0.226	0.0276	0.1897	0.1911
Serviceability - 60 mph Wind 240 deg	166.54	0.350	0.0287	0.2334	0.2351
Serviceability - 60 mph Wind 240 deg	173.08	0.377	0.0290	0.2325	0.2342
Serviceability - 60 mph Wind 240 deg	185.49	0.429	0.0307	0.2149	0.2155
Serviceability - 60 mph Wind 240 deg	190.60	0.450	0.0309	0.2510	0.2513
Serviceability - 60 mph Wind 300 deg	13.21	0.004	0.0017	0.0230	0.0230
Serviceability - 60 mph Wind 300 deg	80.00	0.080	0.0106	0.1147	0.1150
Serviceability - 60 mph Wind 300 deg	86.79	0.094	0.0122	0.1195	0.1199
Serviceability - 60 mph Wind 300 deg	126.79	0.198	0.0230	0.1690	0.1693
Serviceability - 60 mph Wind 300 deg	133.21	0.218	0.0238	0.1828	0.1840
Serviceability - 60 mph Wind 300 deg	166.54	0.338	0.0228	0.2252	0.2262
Serviceability - 60 mph Wind 300 deg	173.08	0.364	0.0223	0.2237	0.2247
Serviceability - 60 mph Wind 300 deg	185.49	0.414	0.0203	0.2068	0.2072
Serviceability - 60 mph Wind 300 deg	190.60	0.434	0.0200	0.2417	0.2428
Serviceability - 60 mph Wind 330 deg	13.21	0.004	0.0010	0.0239	0.0240
Serviceability - 60 mph Wind 330 deg	80.00	0.081	0.0059	0.1153	0.1155
Serviceability - 60 mph Wind 330 deg	86.79	0.095	0.0067	0.1215	0.1216
Serviceability - 60 mph Wind 330 deg	126.79	0.201	0.0126	0.1831	0.1833
Serviceability - 60 mph Wind 330 deg	133.21	0.221	0.0130	0.1851	0.1851
Serviceability - 60 mph Wind 330 deg	166.54	0.343	0.0120	0.2357	0.2365
Serviceability - 60 mph Wind 330 deg	173.08	0.369	0.0116	0.2287	0.2287
Serviceability - 60 mph Wind 330 deg	185.49	0.420	0.0097	0.2535	0.2535
Serviceability - 60 mph Wind 330 deg	190.60	0.441	0.0094	0.2308	0.2312



**PROJECT INFORMATION**

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING TOWER:  
 • INSTALL AT&T LTE RRUS 32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING RRUS-12 (PCS) AND A2 MODULE.  
 • COAX JUMPERS (2) PER SECTOR, FROM EACH RRU (TOTAL OF 6)  
 • FIBER JUMPERS (1) PER SECTOR FROM EACH SQUID TO EACH RRU (TOTAL OF 3)  
ITEMS TO BE INSTALLED @ THE EXISTING AT&T EQUIPMENT AREA:  
 • PROPOSED (3) RRUS-12 (850) AND (6) APTDC-BDFDM-DB SURGE ARRESTORS IN NEW RACK  
 • ADD 2ND XMU IN EXISTING SHELF (INSTALLED WITH LTE 3C) IN EXISTING RACK AND ADD (1) IDLc CABLE  
 • ADD (3) 30A BREAKERS AND (4) 25A BREAKERS TO EXISTING 48V POWER PLANT  
ITEMS TO REMAIN:  
 • (9) ANTENNAS, (6) RRU'S, (12) COAX CABLES, (6) TMA's, (4) DC CABLES, & (2) FIBER CABLES.

SITE ADDRESS: 10 TANNER MARSH ROAD  
 GUILFORD, CT 06437

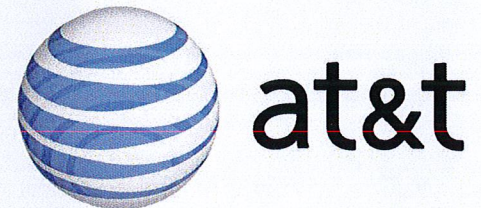
LATITUDE: 41.288694° N 41° 17' 19.3" N  
 LONGITUDE: 72.658249° W 72° 39' 29.7" W

SITE OWNER: AMERICAN TOWER CORP.  
 FA: 10034980

TYPE OF SITE: LATTICE TOWER, INDOOR EQUIPMENT

TOWER HEIGHT: 190.6'± A.G.L.  
 RAD CENTER: 166'± A.G.L.

CURRENT USE: TELECOMMUNICATIONS FACILITY  
 PROPOSED USE: TELECOMMUNICATIONS FACILITY



**SITE NUMBER: CT2017**

**SITE NAME: GUILFORD PROJECT: LTE 4C/4T4R**

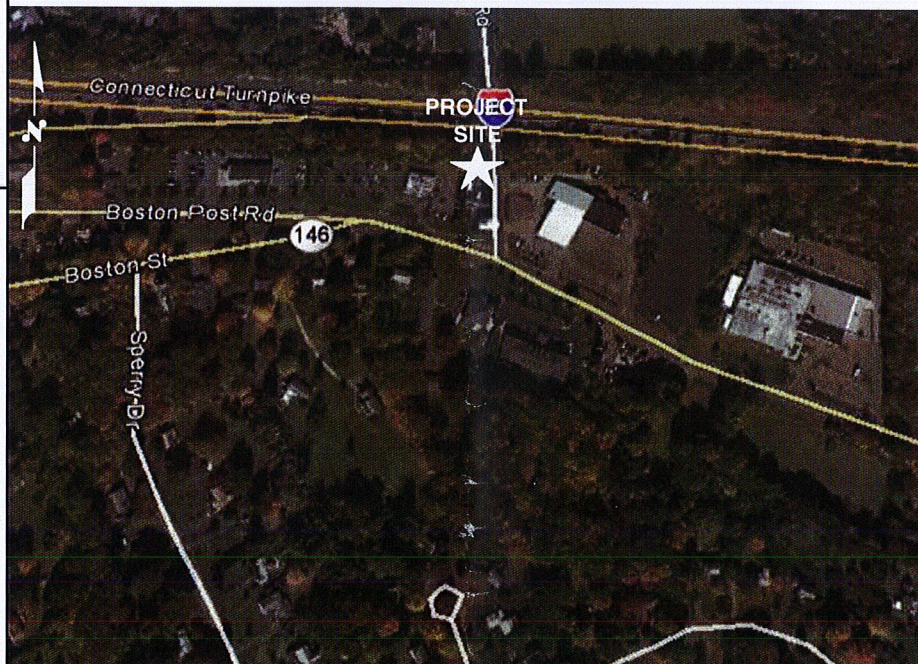
**RETROFIT 2018 UPGRADE**

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	B
GN-1	GENERAL NOTES	B
A-1	COMPOUND & EQUIPMENT PLANS	B
A-2	ANTENNA LAYOUTS & ELEVATION	B
A-3	DETAILS	B
RF-1	RF PLUMBING DIAGRAM	B
G-1	GROUNDING DETAILS	B

**VICINITY MAP**

DIRECTIONS TO SITE:  
 DEPART ENTERPRISE DR TOWARD CAPITOL BLVD. 0.1 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. TAKE RAMP LEFT FOR I-91 S. 28.9 MI. TAKE RAMP LEFT FOR I-95 NORTH TOWARD NEW LONDON. 13.8 MI. AT EXIT 59, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR GOOSE LANE. 0.2 MI. TURN RIGHT ONTO SOUNDVIEW RD, AND THEN IMMEDIATELY TURN LEFT ONTO US-1 / BOSTON POST RD. 0.3 MI. TURN LEFT ONTO TANNER MARSH RD. 105 FT. ARRIVE AT SITE ON THE LEFT.



**GENERAL NOTES**

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OR RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

**AMERICAN TOWER SITE #: 311305**  
**AMERICAN TOWER SITE NAME: GLFD GUILFORD REBUILD CT**

**72 HOURS**

**CALL BEFORE YOU DIG**  
 CALL TOLL FREE 1-800-922-4455  
 OR CALL 811

**UNDERGROUND SERVICE ALERT**

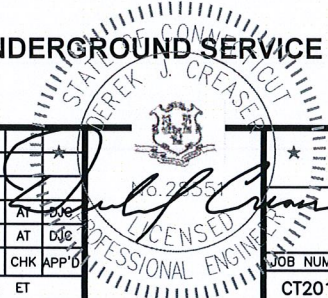
**HG HUDSON**  
 Design Group LLC  
 45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586

**CENTERLINE**  
 COMMUNICATIONS  
 95 RYAN DRIVE  
 RAYNHAM, MA 02767

**SITE NUMBER: CT2017**  
**SITE NAME: GUILFORD**  
**ATC SITE # 311305**  
 10 TANNER MARSH ROAD  
 GUILFORD, CT 06437  
 NEW HAVEN COUNTY

**at&t**  
 500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06067

NO.		DATE	REVISIONS	BY	CHK	APP'G	JOB NUMBER		DRAWING NUMBER	REV
B	03/01/18		ISSUED FOR PERMITTING	MR	AT	DJE	CT2017		T-1	B
A	12/07/17		ISSUED FOR REVIEW	ET	AT	DJE				
SCALE:		DESIGNED BY:		DRAWN BY:						
AS SHOWN		AT		ET						



**AT&T**  
 TITLE SHEET  
 (LTE-4C/4T4R RETROFIT)



**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING 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.
2. 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.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. 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.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 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

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR - CENTERLINE COMMUNICATIONS  
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER - AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. 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.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. 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.
9. 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.
10. 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.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. 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.
16. CONSTRUCTION SHALL COMPLY WITH LTE SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. 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.
18. 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.
19. 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 TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.  
 BUILDING CODE: IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS  
 ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS  
 LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL
- EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

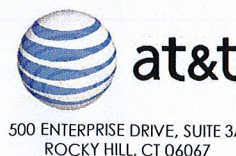
FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

**ABBREVIATIONS**

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	NEW	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF.	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ.	REQUIRED		



**SITE NUMBER: CT2017**  
**SITE NAME: GUILFORD**  
**ATC SITE # 311305**  
 10 TANNER MARSH ROAD  
 GUILFORD, CT 06437  
 NEW HAVEN COUNTY

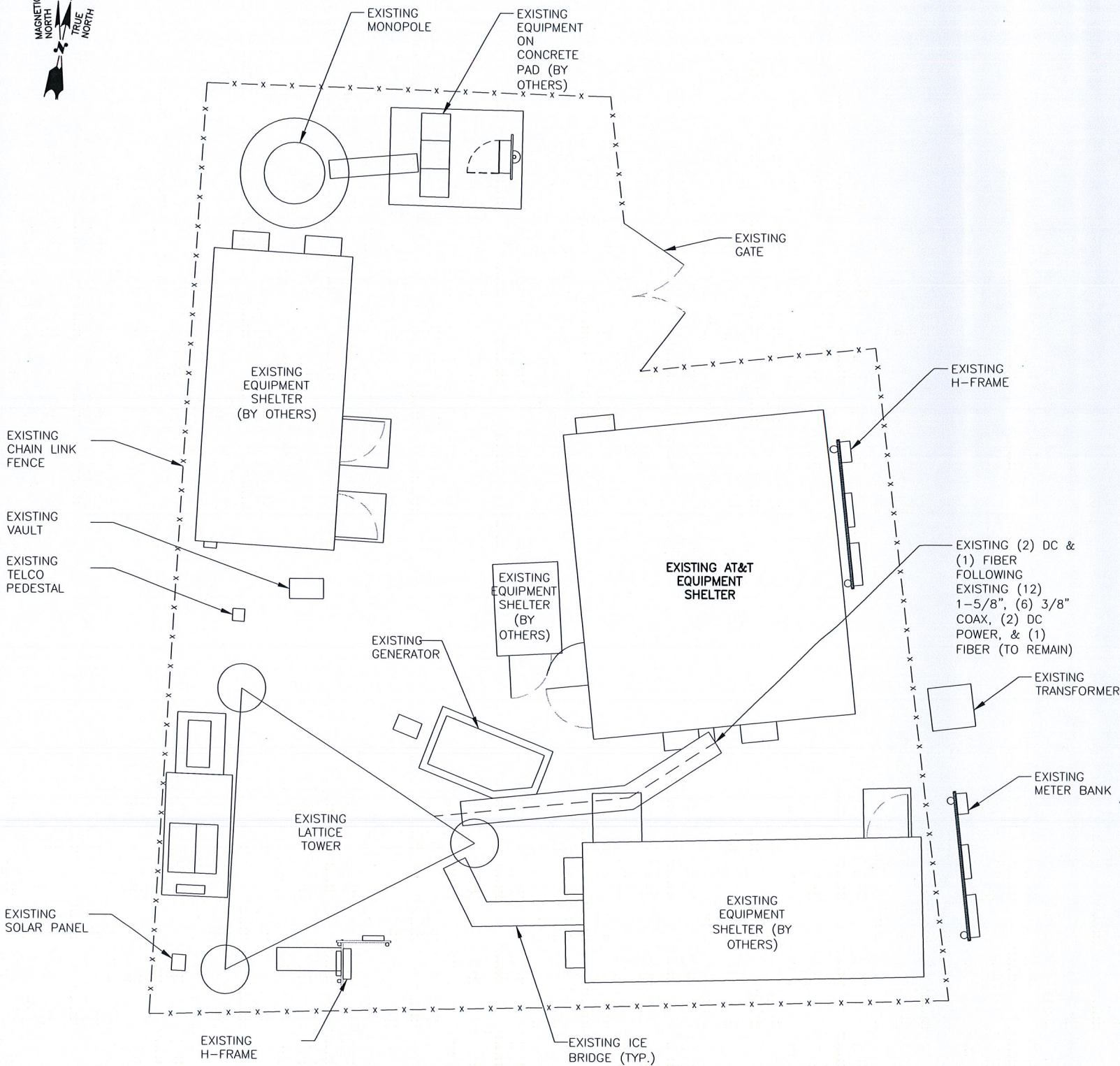
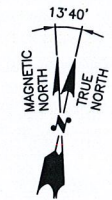


B 03/01/18 ISSUED FOR PERMITTING		MR	AT	03/01/18		AT&T GENERAL NOTES (LTE-4C/4T4R RETROFIT)	
A 12/07/17 ISSUED FOR REVIEW		ET	AT	03/01/18			
NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER	
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: ET			CT2017	
						DRAWING NUMBER	GN-1
						REV	B

45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586

95 RYAN DRIVE  
 RAYNHAM, MA 02767





**COMPOUND PLAN**

22x34 SCALE: 3/16"=1'-0"  
11x17 SCALE: 3/32"=1'-0"

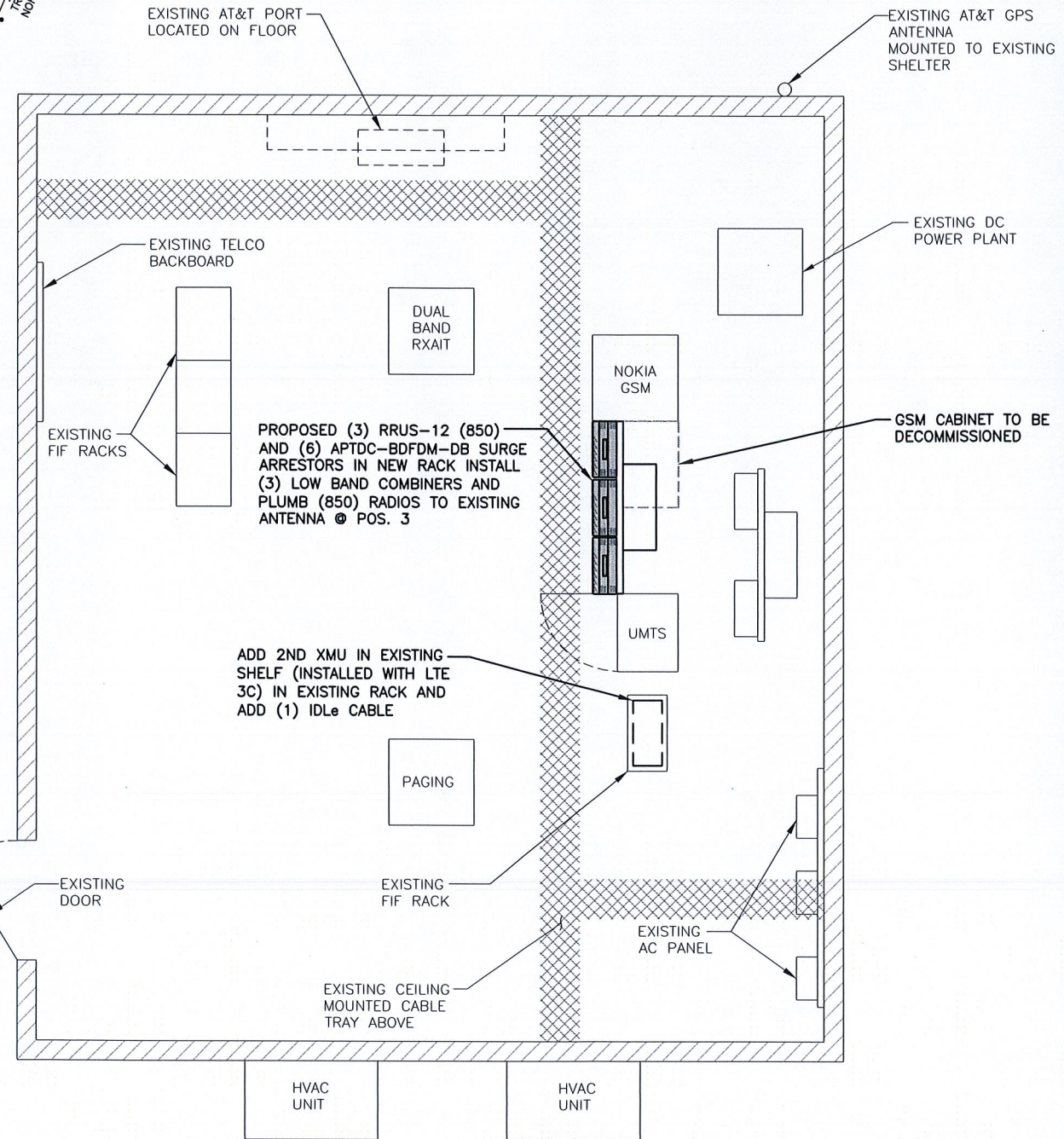
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A-1



**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 10, 2018

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
ALL ANTENNAS AND RRHS ARE TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER & FINAL RF DATA SHEET.



**EQUIPMENT PLAN**

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

2  
A-1



**POWER PANEL NOTE:**  
1. ADD (3) 30A BREAKERS AND (4) 25A BREAKERS TO EXISTING 48V POWER PLANT



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



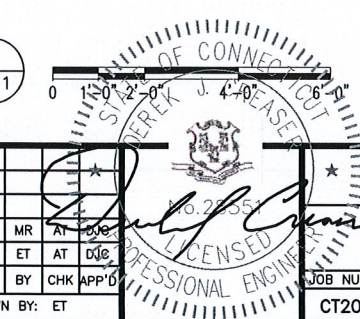
95 RYAN DRIVE  
RAYNHAM, MA 02767

**SITE NUMBER: CT2017**  
**SITE NAME: GUILFORD**  
**ATC SITE # 311305**  
10 TANNER MARSH ROAD  
GUILFORD, CT 06437  
NEW HAVEN COUNTY



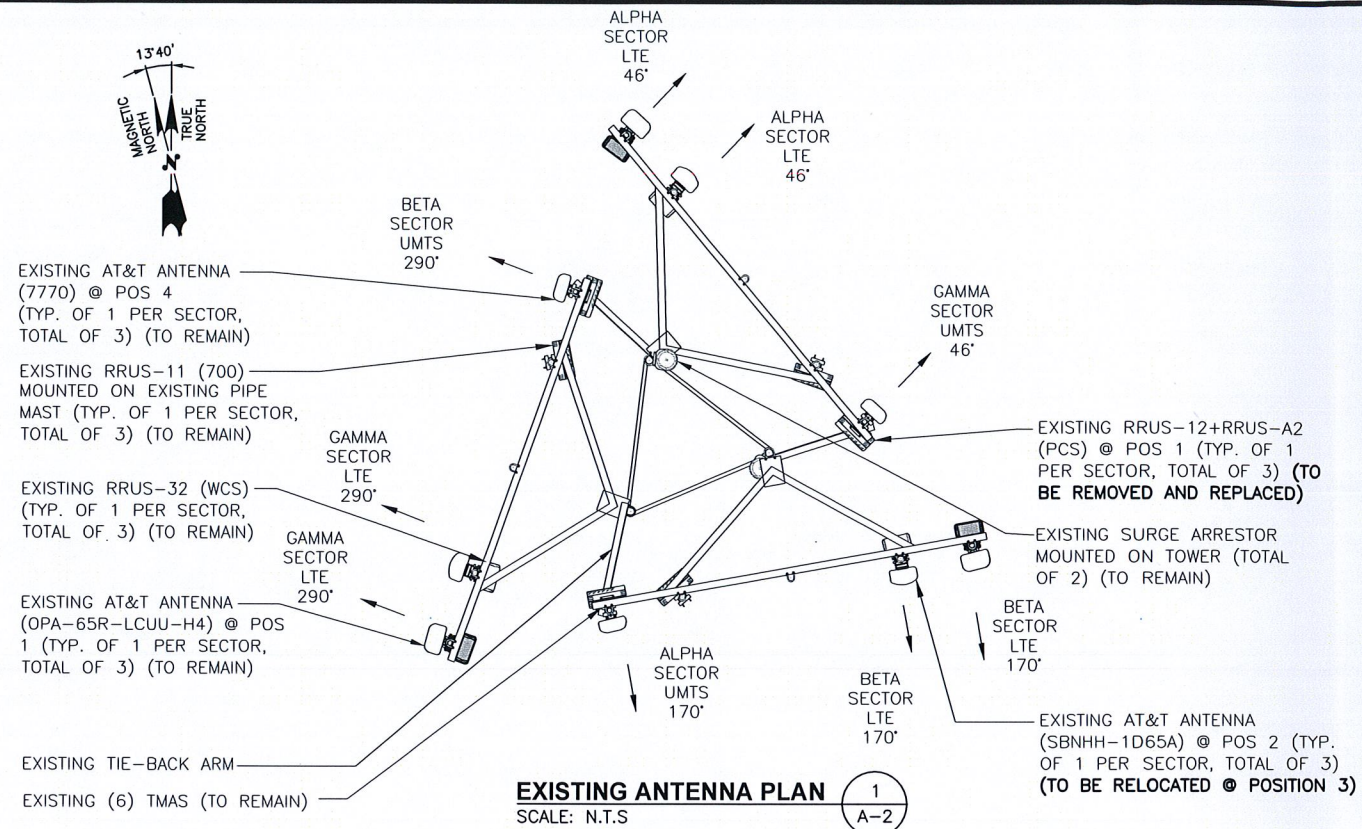
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

NO.		DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER		DRAWING NUMBER		REV
B	03/01/18		ISSUED FOR PERMITTING	MR	AT	DJG	CT2017		A-1		B
A	12/07/17		ISSUED FOR REVIEW	ET	AT	DJG					
SCALE:		AS SHOWN		DESIGNED BY:		AT	DRAWN BY:		ET		

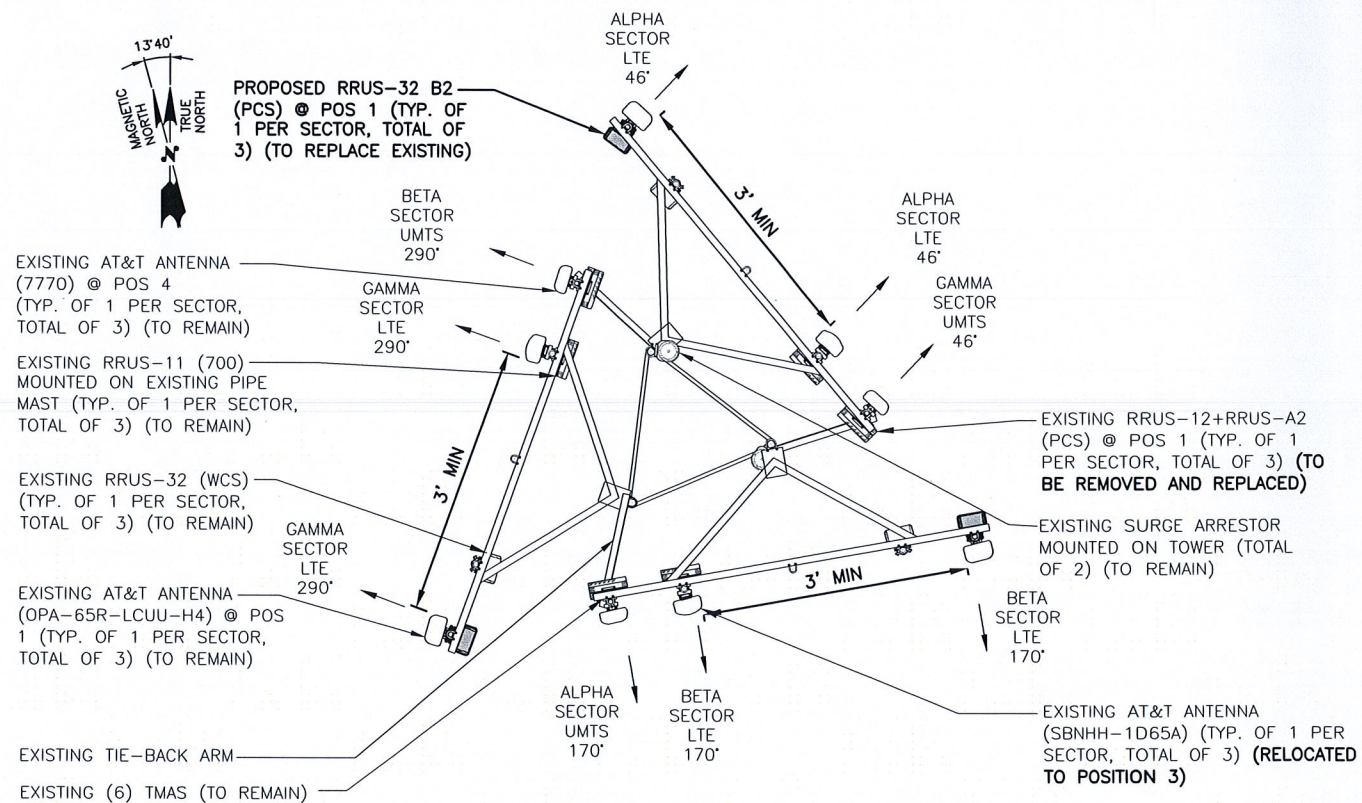


AT&T  
COMPOUND & EQUIPMENT PLAN  
(LTE-4C/4T4R RETROFIT)





**EXISTING ANTENNA PLAN**  
SCALE: N.T.S.

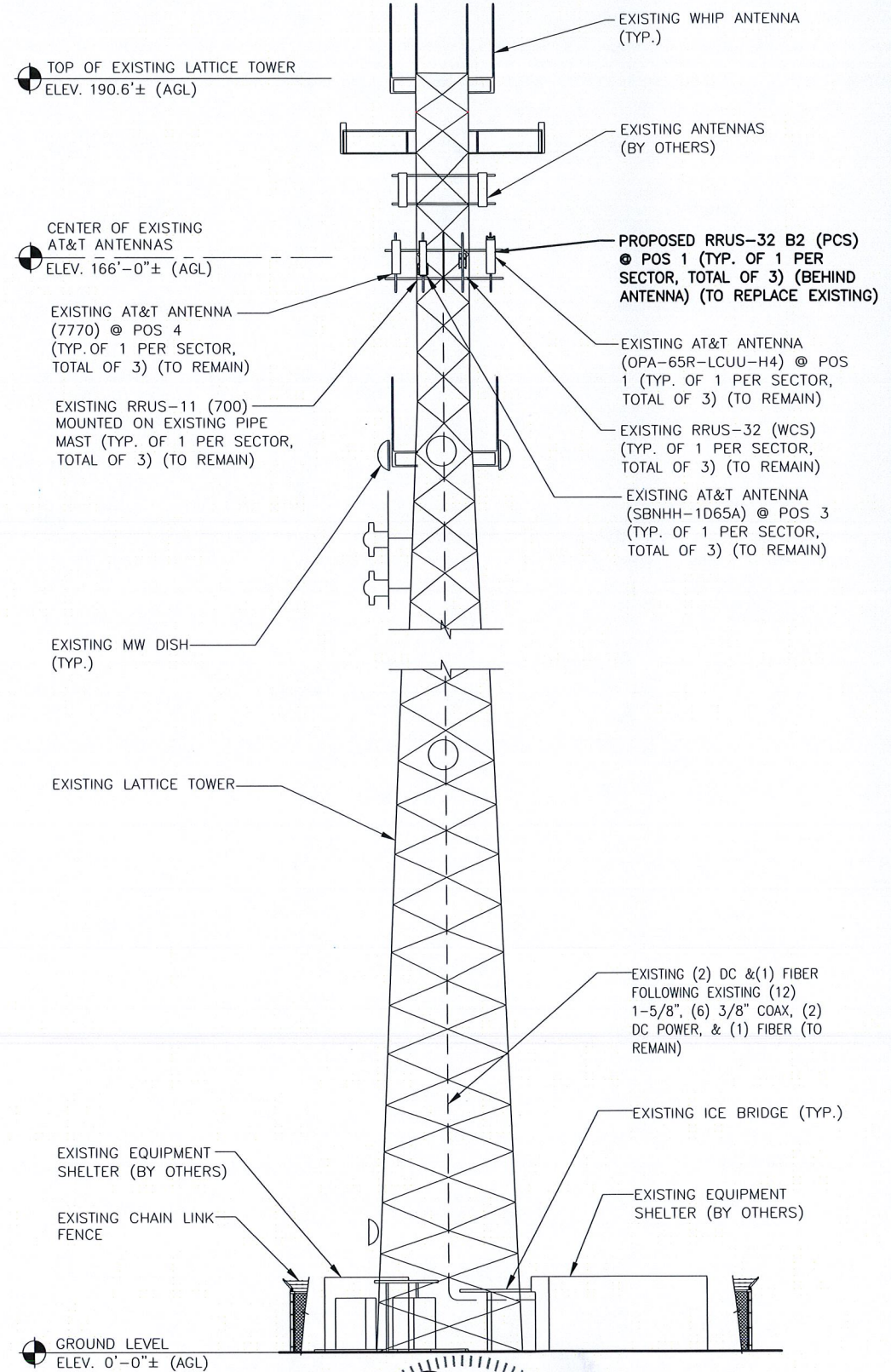


**PROPOSED ANTENNA PLAN**  
SCALE: N.T.S.

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 10, 2018



**SOUTH ELEVATION**  
22x34 SCALE: 3/32"=1'-0"  
11x17 SCALE: 3/64"=1'-0"

**HG HUDSON**  
Design Group LLC  
45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586

**CENTERLINE**  
COMMUNICATIONS  
95 RYAN DRIVE  
RAYNHAM, MA 02767

**SITE NUMBER: CT2017**  
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GUILFORD, CT 06437  
NEW HAVEN COUNTY

**at&t**  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

B 03/01/18 ISSUED FOR PERMITTING		MR	AT	03/01/18		<b>AT&amp;T</b> ANTENNA LAYOUT AND ELEVATION (LTE-4C/4T4R RETROFIT)
A 12/07/17 ISSUED FOR REVIEW		ET	AT	02/07/18		
NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER
						CT2017
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: ET			DRAWING NUMBER
						A-2
						REV
						B



**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
ALL ANTENNAS AND RRHS ARE TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER & FINAL RF DATA SHEET.

**FINAL ANTENNA SCHEDULE**

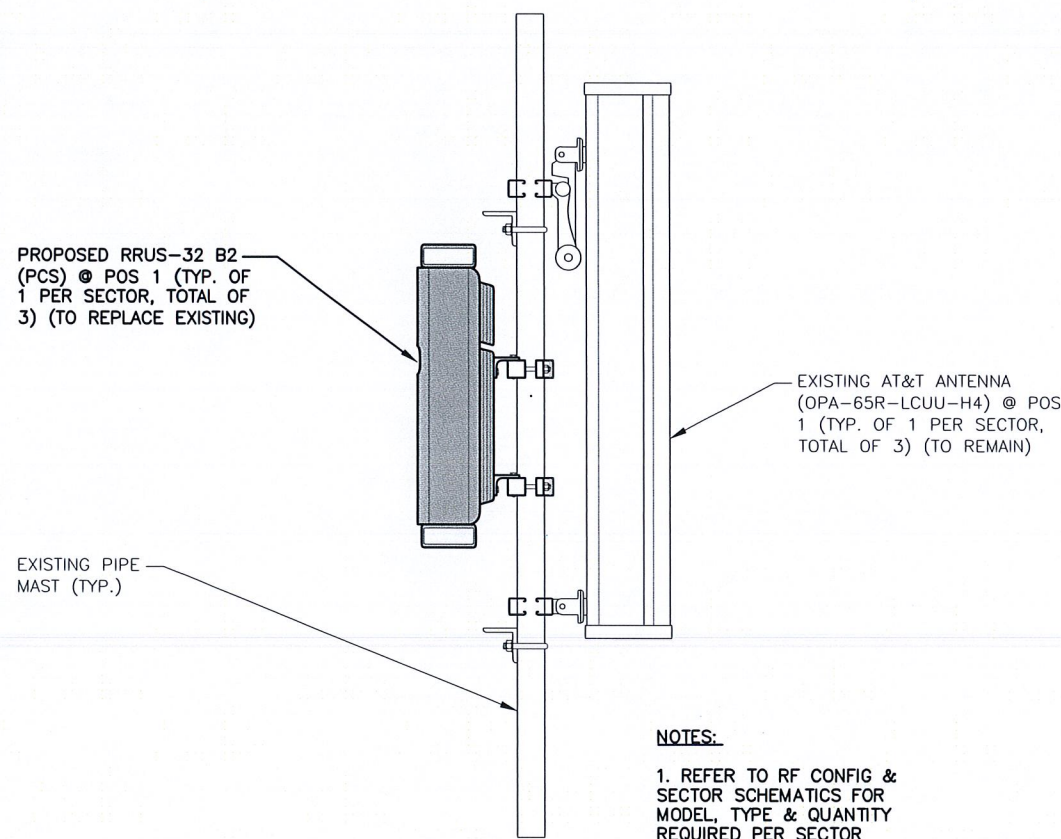
SECTOR	BAND	ANTENNA	SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (L X W X D)	COAX JUMPERS	FIBER JUMPERS	COAX
ALPHA	700 BC / PCS	EXISTING OPA-65R-LCUU-H4	48X14.4X7.3	166'-0"±	46°	-	PROPOSED EXISTING RRUS-32 B2 (PCS) RRUS-11 (700)	27.2X12.1X7.0	*1	**2	-
	-	-	-	-	-	-	-	-	-	-	-
	LTE WCS / 850	EXISTING SBNHH-1D65A	55X11.9X7.1	166'-0"±	46°	-	EXISTING RRUS-32 (WCS)	-	-	-	(2) 1-5/8"
	UMTS 850	EXISTING 7770	55X11X5	166'-0"±	170°	EXISTING EXISTING LGP 21401 LGP 21401	-	-	-	-	(2) 1-5/8"
BETA	700 BC / PCS	EXISTING OPA-65R-LCUU-H4	48X14.4X7.3	166'-0"±	170°	-	PROPOSED EXISTING RRUS-32 B2 (PCS) RRUS-11 (700)	27.2X12.1X7.0	*1	**2	-
	-	-	-	-	-	-	-	-	-	-	-
	LTE WCS / 850	EXISTING SBNHH-1D65A	55X11.9X7.1	166'-0"±	170°	-	EXISTING RRUS-32 (WCS)	-	-	-	(2) 1-5/8"
	UMTS 850	EXISTING 7770	55X11X5	166'-0"±	290°	EXISTING EXISTING LGP 21401 LGP 21401	-	-	-	-	(2) 1-5/8"
GAMMA	700 BC / PCS	EXISTING OPA-65R-LCUU-H4	48X14.4X7.3	166'-0"±	290°	-	PROPOSED EXISTING RRUS-32 B2 (PCS) RRUS-11 (700)	27.2X12.1X7.0	*1	**2	-
	-	-	-	-	-	-	-	-	-	-	-
	LTE WCS / 850	EXISTING SBNHH-1D65A	55X11.9X7.1	166'-0"±	290°	-	EXISTING RRUS-32 (WCS)	-	-	-	(2) 1-5/8"
	UMTS 850	EXISTING 7770	55X11X5	166'-0"±	46°	EXISTING EXISTING LGP 21401 LGP 21401	-	-	-	-	(2) 1-5/8"

**FINAL ANTENNA CONFIGURATION TABLE**

4  
A-3

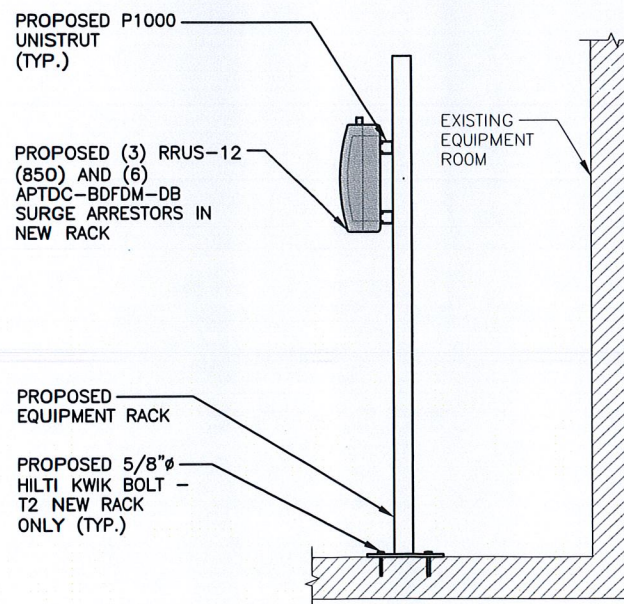
**\*COAX JUMPER NOTE:**  
COAX JUMPERS (2) PER SECTOR, FROM EACH RRU (TOTAL OF 3)

**\*\*FIBER JUMPER NOTE:**  
FIBER JUMPERS (1) PER SECTOR, FROM THE SQUID TO EACH RRU (TOTAL OF 6).



**PROPOSED RRU MOUNTING DETAIL**  
SCALE: N.T.S.

1  
A-3



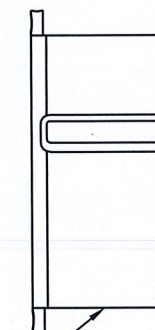
**PROPOSED RRUS MOUNTING DETAIL ON NEW RACK**  
SCALE: N.T.S.

2  
A-3

**RRU CHART**

QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
3(P)3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)(G)	RRUS-12	20.4"	18.5"	7.5"

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS



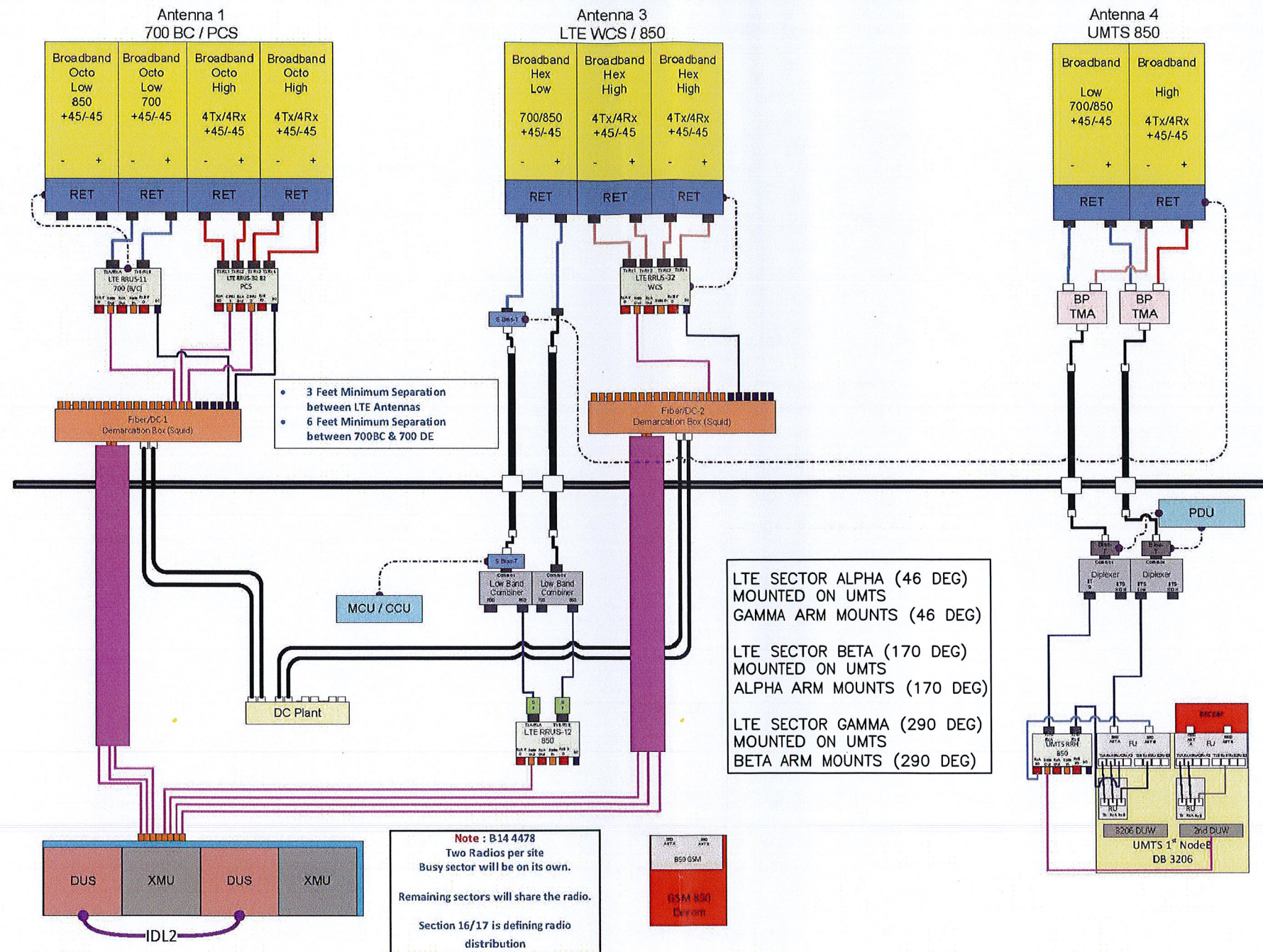
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS  
NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

**PROPOSED RRUS DETAIL**  
SCALE: N.T.S.

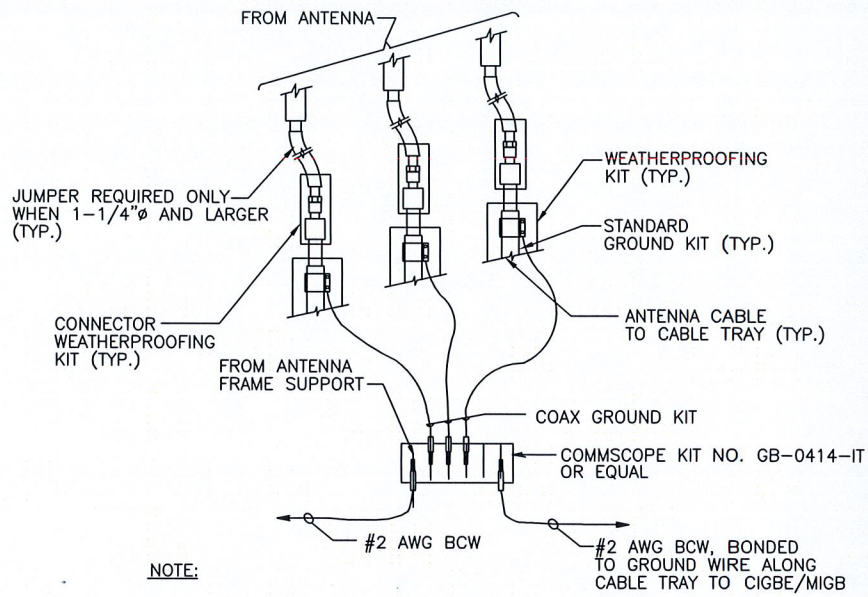
3  
A-3





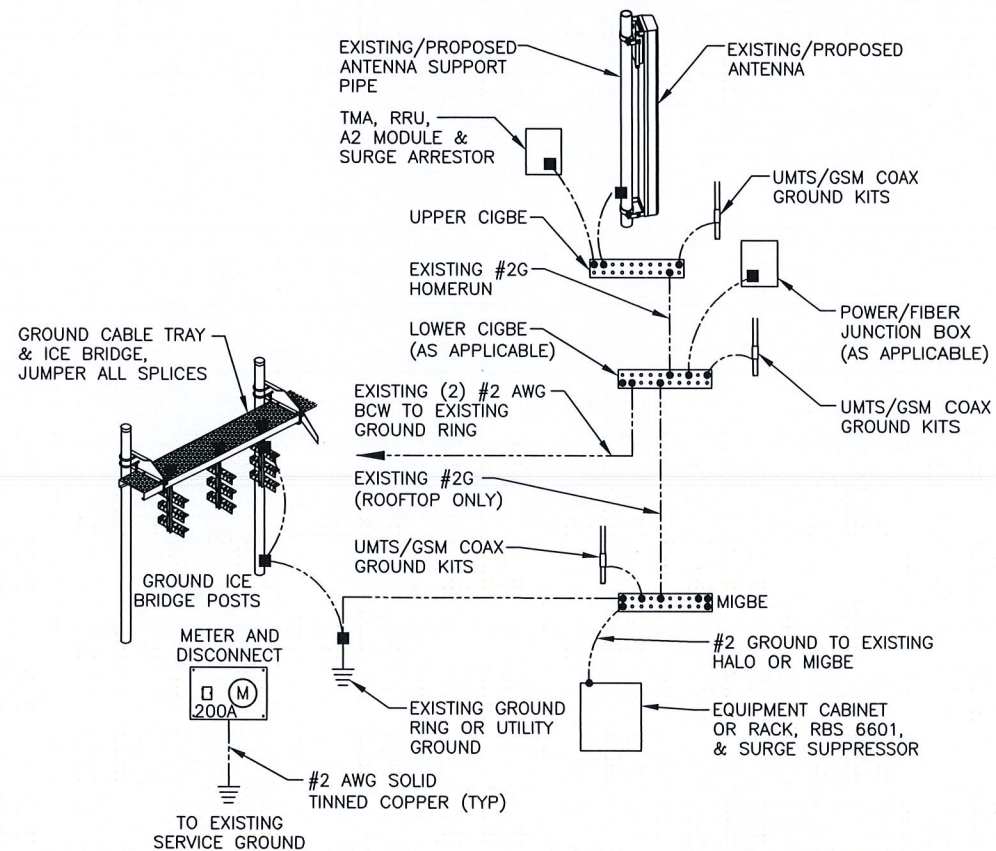
PLUMBING DIAGRAM 1  
SCALE: N.T.S. RF-1



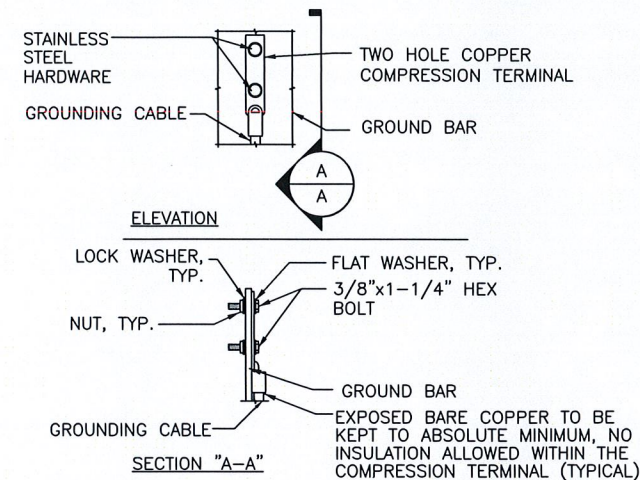


NOTE:  
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** (1)  
SCALE: N.T.S. (G-1)



**GROUNDING RISER DIAGRAM** (2)  
SCALE: N.T.S. (G-1)



NOTE:  
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.  
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.  
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

**TYPICAL GROUND BAR CONNECTION DETAIL** (3)  
SCALE: N.T.S. (G-1)

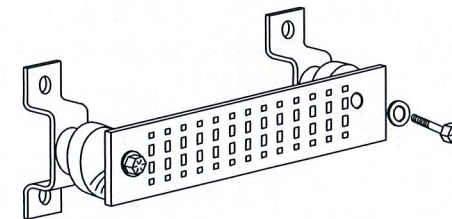
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

**SECTION "A" - SURGE ABSORBERS**

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



**GROUND BAR - DETAIL** (4)  
SCALE: N.T.S. (G-1)



# View/Print Label


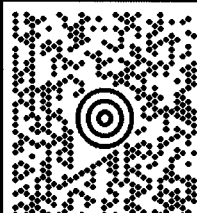
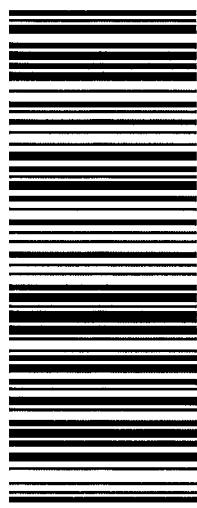

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialogue box that appears. Note: If your browser does not support this function, select Print from the File menu to print the label.
2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
3. **GETTING YOUR SHIPMENT TO UPS**
  - Customers with a scheduled Pickup**
    - o Your driver will pickup your shipment(s) as usual.
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    - o Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. To find the location nearest you, please visit the 'Locations' Quick link at ups.com.

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 RAYNHAM MA 02767-5423

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 SOUTH EASTON MA 02375-1946

FOLD HERE

<p>1 LBS</p> <p>1 OF 1</p> <p>SHIP TO:          GEORGE KRAL, TOWN PLANNER          TOWN OF GUILFORD, CT          31 PARK STREET          GUILFORD CT 06437</p> <p>USER ADDRESS          18007425877          95 RYAN DRIVE SUITE 1          RAYNHAM MA 02767</p>	<p>CT 065 2-03</p>  	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 1412 0536</p> 	<p>BILLING: P/P</p>  <p>XOL18.01.36 NY45 97.0A.01/2018</p>
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# View/Print Label


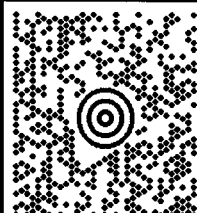


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<p>1 LBS</p> <p>1 OF 1</p> <p>USER ADDRESS        18007425877        95 RYAN DRIVE SUITE 1        RAYNHAM MA 02767</p> <p><b>SHIP TO:</b>        ANNA DWYER, TOWN CLERK        TOWN OF GUILFORD, CT        31 PARK STREET        GUILFORD CT 06437</p>	<p><b>CT 065 2-03</b></p>  	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 1141 3529</p> 	<p>BILLING: P/P</p>  <p>XCL 18.01.36    NV45 97.0A.01.2018</p>
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# View/Print Label


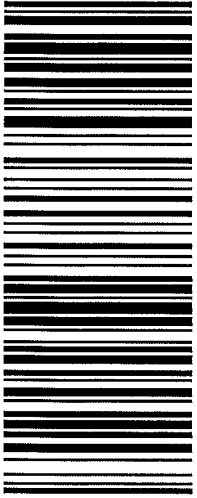

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialogue box that appears. Note: If your browser does not support this function, select Print from the File menu to print the label.
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<p>1 LBS</p> <p>1 OF 1</p> <p>SHIP TO:        MATTHEW T. HOEY III        TOWN OF GUILFORD, CT        31 PARK STREET        GUILFORD CT 06437</p> <p>USER ADDRESS        18007425877        95 RYAN DRIVE SUITE 1        RAYNHAM MA 02767</p>	<p>CT 065 2-03</p> 	<p>UPS GROUND</p> <p>TRACKING #: 1Z 9Y4 503 03 0970 8519</p> 	<p>BILLING: P/P</p>  <p>XOL 18 01.36 NY45 97.0A 01/2018</p>
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# View/Print Label


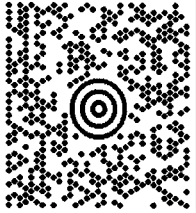
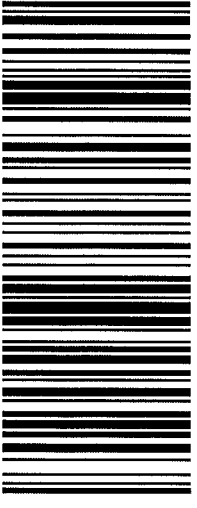

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<p>1 LBS</p> <p>1 OF 1</p> <p>SHIP TO:          SHAWN DUNN          AMERICAN TOWER          10 PRESIDENTIAL WAY          WOBURN MA 01801</p> <p>USER ADDRESS          18007425877          95 RYAN DRIVE SUITE 1          RAYNHAM MA 02767</p>	<p>MA 018 9-04</p>  	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 3312 7477</p> 	<p>BILLING: P/P</p>  <p>XOL 18 01 36    NV45 97 0A 01 /2018</p>
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