EMPIRE telecom

April 16, 2018

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

Regarding:	Notice of Exempt Modification – Addition of 3 Antennas, Addition of 6 Remote Radios, and Addition of 1 Squid.
Property Address:	1590 Newfield Avenue; Stamford, CT 06905 Also known by the City of Stamford as 0 Lot 4 EASTOVER ROAD (the "Property")
Applicant:	AT&T Mobility ("AT&T", Site # CT2109)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 150-foot monopole at the above-referenced address, latitude 41.11273889, longitude -73.53835000. Said monopole and ground is owned by CELLCO PARTNERSHIP (American Tower Corporation).

AT&T desires to modify its existing 9-antenna telecommunications facility by adding (3) antennas, (6) remote radios (RRUs), and (1) Squid Surge suppressor with associated cables. The centerline height of the antenna mount is and will remain at 150 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor of the City of Stamford, the Chief Building Official, and the Zoning Board Administrator. A copy of this letter is also being sent to CELLCO PARTNERSHIP via American Tower, Corp., the owner of the property on which AT&T is located.

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

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's antennas and associated lines will be installed at the existing mount height of 150' on the Monopole tower.
2. The proposed modifications will not involve any changes to ground-space footprint and, therefore will not require an extension of the site boundary.

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3801 Email: kwhite@empiretelecomm.com

3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural analysis completed by American Tower Corporation. dated February 21, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed swap of antennas, addition of radios and addition of squids be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kristen White

Kristen White
Site Acquisition Specialist
Empire Telecom
kwhite@empiretelecomm.com
978-284-3801

Enclosures:
Structural Analysis Report
Radio Frequency Emissions Analysis Report
Map of Site Locus
City of Stamford Property Card
Construction Drawings, Plan Signed and Stamped by Camilo A. Gavaria, CT P.E. License #27517

CC: Hon. David Martin, Mayor, City of Stamford
Robert DeMarco, Stamford Chief Building Official
Vineeta Mathur, Stamford Zoning Board
Shawn Dunn, CELLCO PARTNERSHIP via American Tower Corp.

Exhibit 1

AT&T at 1590 Newfield Avenue; Stamford, CT 06905

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Structural Analysis Report

Structure	:	**148 ft Monopole**
ATC Site Name	:	**SMFR - North, CT**
ATC Site Number	:	**302515**
Engineering Number	:	**OAA720650_C3_02**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**SNET 5641-0015**
Carrier Site Number	:	**CT2109**
Site Location	:	**0 Lot 4 Eastover Road** **Stamford, CT 06905-1403** **41.112800,-73.538400**
County	:	**Fairfield**
Date	:	**February 21, 2018**
Max Usage	:	**71%**
Result	:	**Pass**

Prepared By:
Travis J. Gatling
Structural Engineer I

Travis J. Gatling

Reviewed By:

Feb 22 2018 4:24 PM cosign

COA: PEC.0001553

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Engineered Endeavors Job #5591, dated November 22, 1999
Foundation Drawing	Engineered Endeavors Job #5591, dated November 17, 1999
Geotechnical Report	Dr. Clarence Welti, dated October 25, 2000
Modifications	ATC Project #43868633, dated September 1, 2009 ATC Project #51772939, dated April 11, 2013

Analysis

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

Basic Wind Speed:	93 mph (3-Second Gust V_{ASD}) / 120 mph (3-Second Gust V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.25, S_1 = 0.07
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
160.0	160.0	3	Commscope ATSBT-TOP-MF-4G	Pole Mount	(18) 1 5/8" Coax	T-Mobile
		3	Andrew E15S09P94			
		3	RFS ATMAP1412D-1A20			
		3	Andrew SBNHH-1D65B			
148.0	152.0	6	Powerwave LGP21401	Platform w/ Handrails	(12) 1 1/4" Coax (4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 32 B2			
		3	Powerwave 7770.00			
		3	Quintel QS66512-2			
		3	CCI OPA-65R-LCUU-H6			
143.0	143.0	6	RFS FD9R6004	Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		4	Alcatel-Lucent RRH2X60-1900			
		4	Alcatel-Lucent RRH2x60 700			
		4	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
		2	RFS DB-T1-6Z-8AB-0Z			
		1	Antel BXA-80063-6BF-EDIN-X			
		2	Antel BXA-70063/6CF__2°			
		1	Antel BXA-80080/6CF			
		4	Commscope SBNHH-1D65B			
		4	Commscope SBNHH-1D45B			
132.0	132.0	3	KMW KMDAPS2040000 (E-F Band)	Low Profile Platform	(9) 1 1/4" Coax (6) 1 5/8" Coax	Sprint Nextel
		3	KMW AM-X-WM-17-65-00T (48")			
		9	Decibel DB844H90E-XY			
120.0	120.0	2	Box Enclosures BEN-92P	Low Profile Platform	(3) 1 1/4" Hybriflex (2) 1" Conduit	
		3	Nokia FWHR			
		3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter			
		3	Alcatel-Lucent 4x40W RRH (91 lb)			
		3	Commscope LLPX310R-V1			
		3	RFS APXVSPP18-C-A20			
100.0	105.0	1	Antel BCD-87010___4°	Side Arm	(1) 7/8" Coax	Sensus USA
75.0	75.0	1	PCTEL GPS-TMG-HR-26N	Side Arm	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	152.0	6	Powerwave LGP21401	-	(2) 0.74" 8 AWG 7	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	152.0	6	Kaelus DBC0061F1V51-2	Platform w/ Handrails	(2) 0.78" 8 AWG 6	AT&T Mobility
		1	Raycap DC6-48-60-0-8F (24" Height)			
		1	Raycap DC6-48-60-18-8F (23.5" Height)			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 32 B66			
		3	Kathrein 80010965			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	49%	Pass
Shaft	52%	Pass
Base Plate	41%	Pass
Reinforcement	57%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,994.9	66%
Axial (Kips)	67.9	7%
Shear (Kips)	25.1	71%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
148.0	Kaelus DBC0061F1V51-2	AT&T Mobility	1.613	1.247
	Raycap DC6-48-60-0-8F (24" Height)			
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 32 B66			
	Kathrein 80010965			

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

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Standard Conditions

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

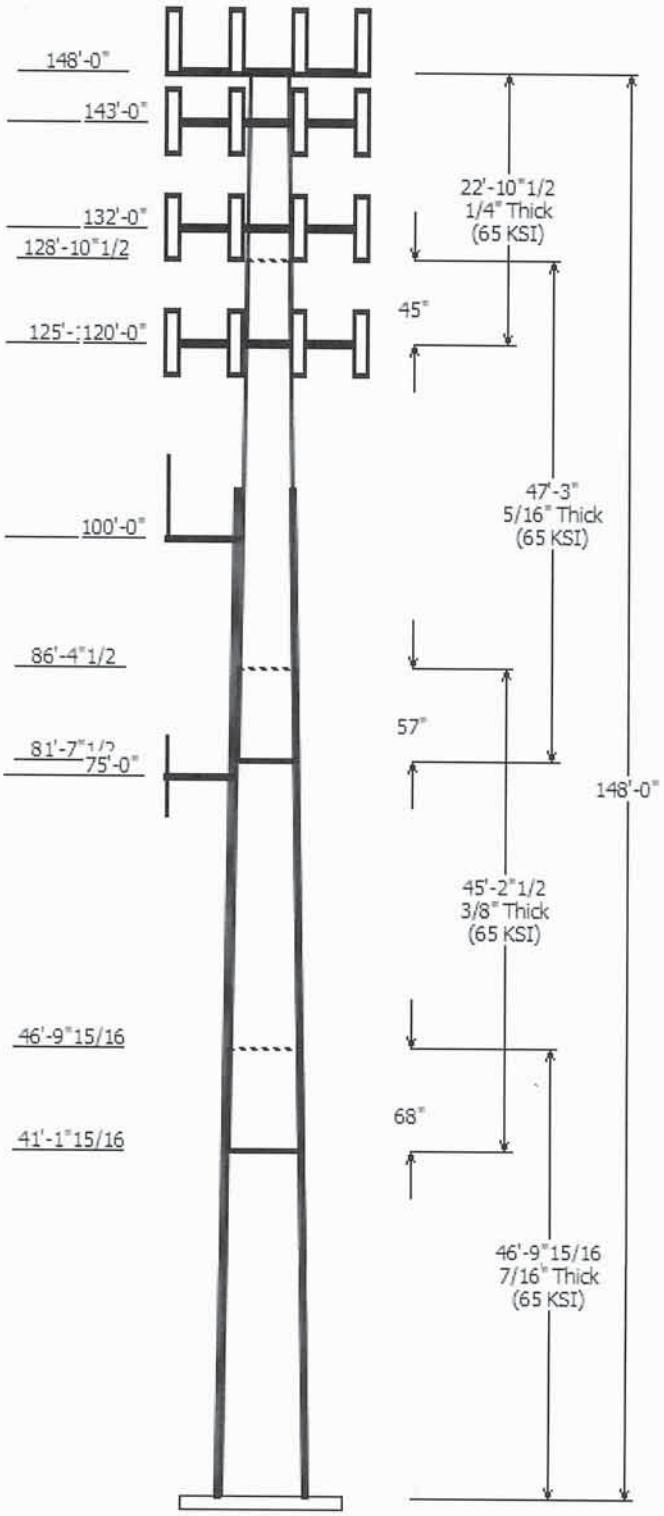
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

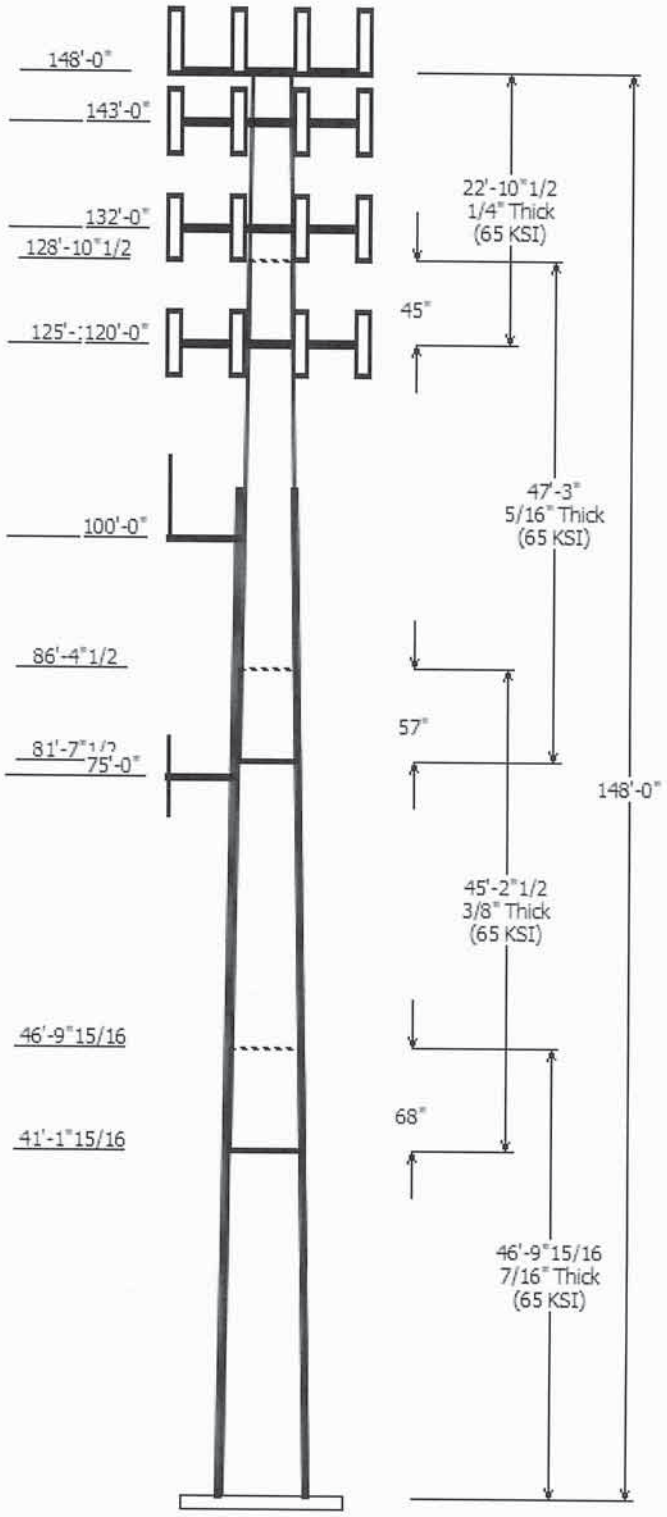
Pole : 302515	Code: ANSI/TIA-222-G
Location : SMFR - North, CT	
Description : 148 ft EEI Monopole	
Client : AT&T MOBILITY	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 148.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.19510 (in/ft)	

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	46.830	38.86	48.00	0.438		0.000	18 Sides	65
2	45.210	31.89	40.71	0.375	Slip Joint	68.000	18 Sides	65
3	47.250	24.23	33.45	0.313	Slip Joint	57.000	18 Sides	65
4	22.877	21.00	25.46	0.250	Slip Joint	45.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
160.000	160.000	3	Andrew SBNHH-1D65B
160.000	160.000	3	RFS ATMAP1412D-1A20
160.000	160.000	3	Andrew E15S09P94
160.000	160.000	3	Commscope ATSBT-TOP-MF-
148.000	152.000	1	Raycap DC6-48-60-0-8F (24" Hei
148.000	152.000	3	Ericsson RRUS 32 B66
148.000	152.000	3	Ericsson RRUS 4478 B14
148.000	152.000	3	Kathrein 80010965
148.000	152.000	6	Kaelus DBC0061F1V51-2
148.000	152.000	1	Raycap DC6-48-60-18-8F (23.5"
148.000	148.000	1	Flat Platform w/ Handrails
148.000	152.000	3	CCI OPA-65R-LCUU-H6
148.000	152.000	3	Quintel QS66512-2
148.000	152.000	3	Powerwave Allgon 7770.00
148.000	152.000	3	Ericsson RRUS 32 B2
148.000	152.000	3	Ericsson RRUS 32
148.000	152.000	3	Ericsson RRUS 11 (Band 12) (55
148.000	152.000	1	Raycap DC6-48-60-18-8F
148.000	152.000	6	Powerwave Allgon LGP21401
148.000	152.000	1	Pipe Mount
143.000	143.000	4	Commscope SBNHH-1D65B
143.000	143.000	6	RFS FD9R6004
143.000	143.000	1	Flat Low Profile Platform
143.000	143.000	1	Antel BXA-80080/6CF
143.000	143.000	4	Commscope SBNHH-1D45B
143.000	143.000	2	Antel BXA-70063/6CF __ 2°
143.000	143.000	1	Antel BXA-80063-6BF-EDIN-X
143.000	143.000	2	RFS DB-T1-6Z-8AB-0Z
143.000	143.000	4	Alcatel-Lucent RRH4x45-B66
143.000	143.000	4	Alcatel-Lucent RRH2x60 700
143.000	143.000	4	Alcatel-Lucent RRH2X60-1900
132.000	132.000	1	Flat Low Profile Platform
132.000	132.000	9	Decibel DB844H90E-XY
132.000	132.000	3	KMW AM-X-WM-17-65-00T (48")
132.000	132.000	3	KMW KMDAPS2040000 (E-F
120.000	120.000	2	Box Enclosures BEN-92P
120.000	120.000	3	Nokia FWHR
120.000	120.000	3	Commscope LLPX310R-V1
120.000	120.000	1	Flat Low Profile Platform
120.000	120.000	3	RFS APXVSPP18-C-A20
120.000	120.000	3	Alcatel-Lucent 4x40W RRH (91 I
120.000	120.000	3	Alcatel-Lucent 800 MHz 2X50W
100.000	105.000	1	Antel BCD-87010 ___ 4°
100.000	100.000	1	Flat Side Arm



75.000	75.000	1	Round Side Arm
75.000	75.000	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
10.000	120.0	1 1/4" Hybriflex	Yes
10.000	120.0	1" Conduit	Yes
10.000	132.0	1 1/4" Coax	No
10.000	132.0	1 5/8" Coax	No
10.000	143.0	1 5/8" Coax	No
10.000	143.0	1 5/8" Hybriflex	Yes
10.000	148.0	0.39" Fiber Trunk	No
10.000	148.0	0.78" 8 AWG 6	No
10.000	148.0	0.78" 8 AWG 6	No
10.000	148.0	1 1/4" Coax	No
10.000	148.0	3" Conduit	No
10.000	160.0	1 5/8" Coax	No
10.000	160.0	1 5/8" Coax	Yes
10.000	75.000	1/2" Coax	Yes
10.000	100.0	7/8" Coax	Yes
0.000	113.2	DYWIDAG	Yes

Load Cases

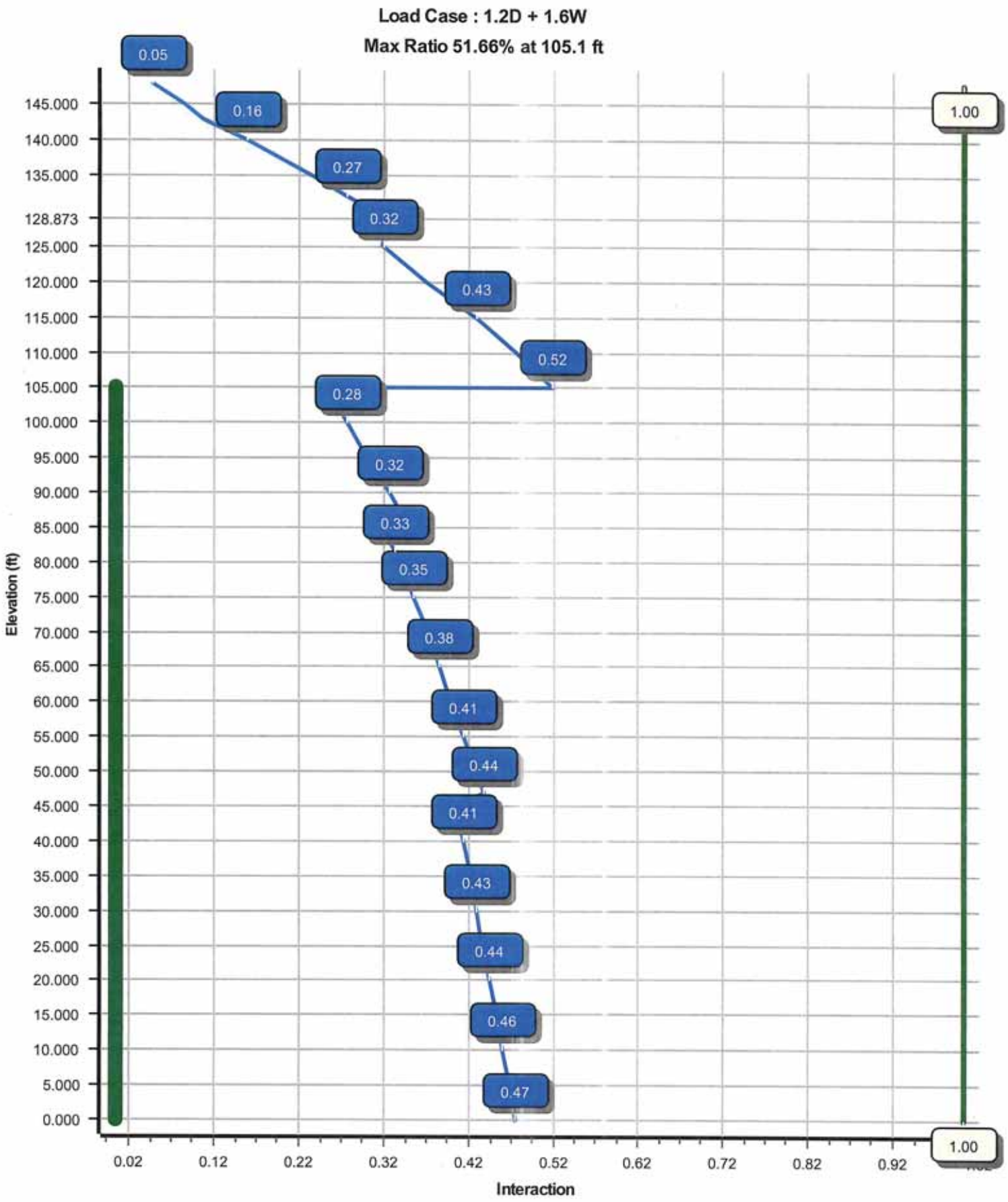
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2994.91	25.10	67.90
0.9D + 1.6W	2827.34	23.69	50.92
1.2D + 1.0Di + 1.0Wi	819.25	6.87	103.58
(1.2 + 0.2Sds) * DL + E ELFM	268.29	2.19	68.41
(1.2 + 0.2Sds) * DL + E EMAM	578.17	4.82	68.41
(0.9 - 0.2Sds) * DL + E ELFM	263.59	2.18	46.23
(0.9 - 0.2Sds) * DL + E EMAM	567.27	4.81	46.23
1.0D + 1.0W	739.63	6.17	56.61

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 51.66% at 105.1 ft
0.05
0.16
0.27
0.32
0.43
0.52
0.28
0.32
0.33
0.35
0.38
0.41
0.44
0.41
0.43
0.44
0.46
0.47
1.00
1.00
145.000
140.000
135.000
128.873
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	**302515**	**Code: ANSI/TIA-222-G**	
Site Name:	**SMFR - North, CT**	**Engineering Number:OAA720650_C3_02**	**2/21/2018 12:44:36 PM**
Customer:	**AT&T MOBILITY**		

Analysis Parameters

Location :	**FAIRFIELD County, CT**	**Height (ft) :**	**148**
Code :	**ANSI/TIA-222-G**	**Base Diameter (in) :**	**48.00**
Shape :	**18 Sides**	**Top Diameter (in) :**	**21.00**
Pole Type :	**Taper**	**Taper (in/ft) :**	**0.195**
Pole Manfacturer :	**EEI**	**Rotation (deg) :**	**0.00**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**93 mph**
Exposure Category:	**B**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**2.50**				
T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.030**
S_s:	**0.249**	**S_1:**	**0.069**	**C_s Max:**	**0.030**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.266**	**S_{d1}:**	**0.110**		

Load Cases

1.2D + 1.6W	**93 mph with No Ice**
0.9D + 1.6W	**93 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:36 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	46.830	0.4375	65		0.00	9,513	48.00	0.00	66.04	18876.3	17.93	109.71	38.86	46.83	53.36	9953.9	14.25	88.83	0.195101
2-18	45.210	0.3750	65	Slip	68.00	6,579	40.71	41.16	48.02	9874.4	17.74	108.58	31.89	86.37	37.52	4710.6	13.59	85.06	0.195101
3-18	47.250	0.3125	65	Slip	57.00	4,549	33.45	81.62	32.87	4560.0	17.46	107.04	24.23	128.87	23.72	1714.9	12.26	77.54	0.195101
4-18	22.877	0.2500	65	Slip	45.00	1,420	25.46	125.12	20.01	1606.8	16.55	101.85	21.00	148.00	16.46	895.7	13.40	84.00	0.195101
					Shaft Weight	22,062													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
160.00	Andrew E15S09P94	3	0.000	0.000	14.60	0.660	0.50
160.00	Andrew SBNHH-1D65B	3	0.000	0.000	50.70	8.170	0.69
160.00	Commscope ATSBT-TOP-MF-4G	3	0.000	0.000	1.80	0.200	0.50
160.00	RFS ATMAP1412D-1A20	3	0.000	0.000	13.00	1.000	0.50
148.00	CCI OPA-65R-LCUU-H6	3	0.000	4.000	73.00	9.660	0.66
148.00	Ericsson RRUS 11 (Band 12) (55	3	0.000	4.000	55.00	2.520	0.67
148.00	Ericsson RRUS 32	3	0.000	4.000	50.80	2.690	0.67
148.00	Ericsson RRUS 32 B2	3	0.000	4.000	53.00	2.740	0.67
148.00	Ericsson RRUS 32 B66	3	0.000	4.000	53.00	2.740	0.50
148.00	Ericsson RRUS 4478 B14	3	0.000	4.000	59.90	1.840	0.50
148.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
148.00	Kaelus DBC0061F1V51-2	6	0.000	4.000	25.50	0.510	0.50
148.00	Kathrein 80010965	3	0.000	4.000	97.60	13.810	0.62
148.00	Pipe Mount	1	0.000	4.000	200.00	6.400	1.00
148.00	Powerwave Allgon 7770.00	3	0.000	4.000	35.00	5.510	0.65
148.00	Powerwave Allgon LGP21401	6	0.000	4.000	14.10	1.100	0.50
148.00	Quintel QS66512-2	3	0.000	4.000	111.00	8.130	0.74
148.00	Raycap DC6-48-60-0-8F (24" Hei	1	0.000	4.000	32.80	1.280	1.00
148.00	Raycap DC6-48-60-18-8F	1	0.000	4.000	20.00	1.110	1.00
148.00	Raycap DC6-48-60-18-8F (23.5"	1	0.000	4.000	20.00	1.110	1.00
143.00	Alcatel-Lucent RRH2x60 700	4	0.000	0.000	56.70	2.150	0.67
143.00	Alcatel-Lucent RRH2X60-1900	4	0.000	0.000	43.00	1.880	0.50
143.00	Alcatel-Lucent RRH4x45-B66 w/o	4	0.000	0.000	63.30	2.470	0.67
143.00	Antel BXA-70063/6CF __ 2°	2	0.000	0.000	17.00	7.570	0.65
143.00	Antel BXA-80063-6BF-EDIN-X	1	0.000	0.000	19.20	7.260	0.66
143.00	Antel BXA-80080/6CF	1	0.000	0.000	22.00	7.780	0.65
143.00	Commscope SBNHH-1D45B	4	0.000	0.000	61.70	11.400	0.63
143.00	Commscope SBNHH-1D65B	4	0.000	0.000	50.70	8.170	0.69
143.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
143.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.67
143.00	RFS FD9R6004	6	0.000	0.000	3.10	0.370	0.50
132.00	Decibel DB844H90E-XY	9	0.000	0.000	14.00	3.610	0.74
132.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
132.00	KMW AM-X-WM-17-65-00T (48")	3	0.000	0.000	14.20	3.360	0.64
132.00	KMW KMDAPS2040000 (E-F	3	0.000	0.000	15.90	0.970	0.50
120.00	Alcatel-Lucent 4x40W RRH (91 I	3	0.000	0.000	91.00	3.290	0.67
120.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.000	0.000	64.00	2.060	0.67
120.00	Box Enclosures BEN-92P	2	0.000	0.000	2.20	0.780	0.50
120.00	Commscope LLPX310R-V1	3	0.000	0.000	27.60	4.340	0.63
120.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
120.00	Nokia FWHR	3	0.000	0.000	26.50	1.030	0.50
120.00	RFS APXVSPP18-C-A20	3	0.000	0.000	57.00	8.020	0.69
100.00	Antel BCD-87010 ___ 4°	1	0.000	5.000	26.50	2.900	1.00
100.00	Flat Side Arm	1	0.000	0.000	150.00	6.300	1.00
75.00	PCTEL GPS-TMG-HR-26N	1	0.000	0.000	0.60	0.090	1.00
75.00	Round Side Arm	1	0.000	0.000	150.00	5.200	1.00

Totals Num Loadings:46 127 11645.10

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
10.00	160.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
10.00	160.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	T-Mobile
10.00	148.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
10.00	148.00	4	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
10.00	148.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
10.00	148.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
10.00	148.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
10.00	143.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
10.00	143.00	2	1 5/8" Hybriflex	1.98	1.30	N	0.00	Y	Verizon
10.00	132.00	9	1 1/4" Coax	1.55	0.63	N	0.00	N	Sprint Nextel
10.00	132.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
10.00	120.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Y	Sprint Nextel
10.00	120.00	2	1" Conduit	1.30	1.68	N	0.00	Y	Sprint Nextel
0.00	113.25	4	DYWIDAG	2.50	16.70	N	1.66	Y	-
10.00	100.00	1	7/8" Coax	1.09	0.33	N	0.00	Y	Sensus USA
10.00	75.00	1	1/2" Coax	0.63	0.15	N	0.00	Y	Sprint Nextel

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
0.00	105.1	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	48.000	66.044	18,876.3	17.93	109.71	80.3	774.6	0.0	0.0	19.64	7,401	0.0
5.00		0.4375	47.024	64.690	17,738.5	17.54	107.48	80.8	743.0	0.0	1,112.1	19.64	7,141	334.0
10.00		0.4375	46.049	63.335	16,647.3	17.15	105.25	81.2	712.0	0.0	1,089.1	19.64	6,885	334.0
15.00		0.4375	45.073	61.980	15,601.9	16.76	103.03	81.7	681.8	0.0	1,066.1	19.64	6,634	334.0
20.00		0.4375	44.098	60.626	14,601.2	16.36	100.80	82.2	652.2	0.0	1,043.0	19.64	6,387	334.0
25.00		0.4375	43.122	59.271	13,644.2	15.97	98.57	82.6	623.2	0.0	1,020.0	19.64	6,145	334.0
30.00		0.4375	42.147	57.917	12,729.9	15.58	96.34	82.6	594.9	0.0	996.9	19.64	5,908	334.0
35.00		0.4375	41.171	56.562	11,857.5	15.18	94.11	82.6	567.3	0.0	973.9	19.64	5,676	334.0
40.00		0.4375	40.196	55.208	11,025.8	14.79	91.88	82.6	540.3	0.0	950.8	19.64	5,448	334.0
41.16	Bot - Section 2	0.4375	39.969	54.892	10,838.1	14.70	91.36	82.6	534.1	0.0	217.9	19.64	5,396	77.7
45.00		0.4375	39.220	53.853	10,234.0	14.40	89.65	82.6	513.9	0.0	1,330.9	19.64	5,396	256.3
46.83	Top - Section 1	0.3750	39.613	46.702	9,084.7	17.22	105.64	81.2	451.7	0.0	625.9	19.64	5,314	122.2
50.00		0.3750	38.995	45.966	8,661.8	16.93	103.99	81.5	437.5	0.0	499.8	19.64	5,174	211.8
55.00		0.3750	38.019	44.805	8,021.9	16.47	101.39	82.0	415.6	0.0	772.2	19.64	4,956	334.0
60.00		0.3750	37.044	43.644	7,414.3	16.01	98.78	82.6	394.2	0.0	752.4	19.64	4,744	334.0
65.00		0.3750	36.068	42.483	6,838.2	15.55	96.18	82.6	373.4	0.0	732.7	19.64	4,536	334.0
70.00		0.3750	35.093	41.321	6,292.7	15.09	93.58	82.6	353.2	0.0	712.9	19.64	4,332	334.0
75.00		0.3750	34.117	40.160	5,777.0	14.63	90.98	82.6	333.5	0.0	693.2	19.64	4,134	334.0
80.00		0.3750	33.142	38.999	5,290.3	14.17	88.38	82.6	314.4	0.0	673.4	19.64	3,940	334.0
81.62	Bot - Section 3	0.3750	32.825	38.622	5,138.4	14.02	87.53	82.6	308.3	0.0	214.4	19.64	3,878	108.4
85.00		0.3750	32.166	37.838	4,831.7	13.71	85.78	82.6	295.9	0.0	813.2	19.64	3,871	225.6
86.37	Top - Section 2	0.3125	32.523	31.948	4,188.0	16.94	104.08	81.5	253.6	0.0	326.0	19.64	3,819	91.7
90.00		0.3125	31.816	31.246	3,918.0	16.54	101.81	81.9	242.6	0.0	389.9	19.64	3,683	242.3
95.00		0.3125	30.840	30.279	3,565.2	15.99	98.69	82.6	227.7	0.0	523.4	19.64	3,500	334.0
100.0		0.3125	29.865	29.311	3,234.2	15.44	95.57	82.6	213.3	0.0	506.9	19.64	3,322	334.0
105.0		0.3125	28.889	28.344	2,924.4	14.89	92.45	82.6	199.4	0.0	490.5	19.64	3,148	334.0
105.1	Reinf. Top	0.3125	28.865	28.319	2,916.9	14.88	92.37	82.6	199.0	0.0	12.1	19.64	3,144	8.3
110.0		0.3125	27.914	27.376	2,635.0	14.34	89.32	82.6	185.9	0.0	462.0			
115.0		0.3125	26.938	26.409	2,365.4	13.79	86.20	82.6	172.9	0.0	457.5			
120.0		0.3125	25.963	25.441	2,114.8	13.24	83.08	82.6	160.4	0.0	441.1			
125.0		0.3125	24.987	24.473	1,882.6	12.69	79.96	82.6	148.4	0.0	424.6			
125.1	Bot - Section 4	0.3125	24.963	24.450	1,877.1	12.67	79.88	82.6	148.1	0.0	10.3			
128.8	Top - Section 3	0.2500	24.732	19.425	1,471.0	16.03	98.93	82.5	117.1	0.0	558.9			
130.0		0.2500	24.512	19.251	1,431.7	15.88	98.05	82.6	115.0	0.0	74.1			
132.0		0.2500	24.122	18.941	1,363.7	15.60	96.49	82.6	111.4	0.0	130.0			
135.0		0.2500	23.536	18.477	1,265.9	15.19	94.15	82.6	105.9	0.0	191.0			
140.0		0.2500	22.561	17.703	1,113.3	14.50	90.24	82.6	97.2	0.0	307.8			
143.0		0.2500	21.976	17.239	1,028.0	14.09	87.90	82.6	92.1	0.0	178.3			
145.0		0.2500	21.585	16.929	973.6	13.81	86.34	82.6	88.8	0.0	116.3			
148.0		0.2500	21.000	16.465	895.7	13.40	84.00	82.6	84.0	0.0	170.4			
											22,061.8			7,022.3

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:36 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W | 93 mph with No Ice | 23 Iterations

Gust Response Factor :1.10 | Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		169.3	0.0					0.0	0.0	169.3	0.0	0.0	0.0
5.00		335.1	1,334.6					0.0	801.6	335.1	2,136.2	0.0	0.0
10.00		338.6	1,306.9					0.0	801.6	338.6	2,108.5	0.0	0.0
15.00		343.2	1,279.3					0.0	1,182.2	343.2	2,461.4	0.0	0.0
20.00		338.3	1,251.6					0.0	1,182.2	338.3	2,433.8	0.0	0.0
25.00		333.5	1,223.9					0.0	1,182.2	333.5	2,406.1	0.0	0.0
30.00		332.5	1,196.3					0.0	1,182.2	332.5	2,378.5	0.0	0.0
35.00		338.4	1,168.6					0.0	1,182.2	338.4	2,350.8	0.0	0.0
40.00		211.8	1,141.0					0.0	1,182.2	211.8	2,323.1	0.0	0.0
41.16	Bot - Section 2	177.4	261.5					0.0	275.1	177.4	536.6	0.0	0.0
45.00		203.1	1,597.1					0.0	907.1	203.1	2,504.2	0.0	0.0
46.83	Top - Section 1	180.4	751.1					0.0	432.7	180.4	1,183.8	0.0	0.0
50.00		296.7	599.8					0.0	749.5	296.7	1,349.2	0.0	0.0
55.00		366.4	926.6					0.0	1,182.2	366.4	2,108.8	0.0	0.0
60.00		369.7	902.9					0.0	1,182.2	369.7	2,085.1	0.0	0.0
65.00		372.2	879.2					0.0	1,182.2	372.2	2,061.4	0.0	0.0
70.00		374.0	855.5					0.0	1,182.2	374.0	2,037.7	0.0	0.0
75.00	Appurtenance(s)	375.1	831.8	178.3	0.0	0.0	180.7	0.0	1,182.2	553.4	2,194.7	0.0	0.0
80.00		248.8	808.1					0.0	1,181.3	248.8	1,989.4	0.0	0.0
81.62	Bot - Section 3	190.3	257.3					0.0	383.5	190.3	640.8	0.0	0.0
85.00		181.9	975.8					0.0	797.7	181.9	1,773.5	0.0	0.0
86.37	Top - Section 2	190.3	391.2					0.0	324.5	190.3	715.7	0.0	0.0
90.00		327.3	467.9					0.0	856.8	327.3	1,324.7	0.0	0.0
95.00		378.6	628.1					0.0	1,181.3	378.6	1,809.3	0.0	0.0
100.00	Appurtenance(s)	377.3	608.3	338.1	0.0	537.9	211.8	0.0	1,181.3	715.4	2,001.4	0.0	0.0
105.00		193.0	588.6					0.0	1,179.3	193.0	1,767.8	0.0	0.0
105.13	Reinf. Top	187.4	14.5					0.0	29.5	187.4	43.9	0.0	0.0
110.00		360.0	554.3					0.0	759.0	360.0	1,313.4	0.0	0.0
115.00		336.5	549.1					0.0	638.2	336.5	1,187.3	0.0	0.0
120.00	Appurtenance(s)	316.6	529.3	2,173.9	0.0	0.0	2,763.2	0.0	377.7	2,490.5	3,670.2	0.0	0.0
125.00		161.3	509.5					0.0	339.5	161.3	849.1	0.0	0.0
125.12	Bot - Section 4	123.1	12.3					0.0	8.4	123.1	20.7	0.0	0.0
128.87	Top - Section 3	154.5	670.7					0.0	254.6	154.5	925.4	0.0	0.0
130.00		97.7	89.0					0.0	76.5	97.7	165.5	0.0	0.0
132.00	Appurtenance(s)	155.5	156.0	2,046.0	0.0	0.0	2,059.6	0.0	135.8	2,201.4	2,351.3	0.0	0.0
135.00		246.4	229.2					0.0	165.6	246.4	394.8	0.0	0.0
140.00		244.3	369.3					0.0	276.0	244.3	645.3	0.0	0.0
143.00	Appurtenance(s)	151.1	214.0	4,125.9	0.0	0.0	3,340.1	0.0	165.6	4,277.0	3,719.7	0.0	0.0
145.00		149.7	139.5					0.0	80.5	149.7	220.1	0.0	0.0
148.00	Appurtenance(s)	89.6	204.5	5,173.5	0.0	13,753.9	5,130.4	0.0	120.8	5,263.1	5,455.7	0.0	0.0
								Totals:		24,352.6	67,644.7	0.00	0.00

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:42 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W — 93 mph with No Ice — 23 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-67.90	-25.10	0.00	-2,994.91	0.00	2,994.91	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.472
5.00	-65.69	-24.95	0.00	-2,869.40	0.00	2,869.40	4,702.37	2,351.19	8,987.95	4,500.65	0.09	-0.16	0.465
10.00	-63.52	-24.78	0.00	-2,744.66	0.00	2,744.66	4,630.27	2,315.13	8,663.09	4,337.98	0.34	-0.32	0.458
15.00	-60.99	-24.59	0.00	-2,620.76	0.00	2,620.76	4,557.03	2,278.52	8,341.98	4,177.19	0.76	-0.48	0.450
20.00	-58.49	-24.40	0.00	-2,497.80	0.00	2,497.80	4,482.67	2,241.34	8,024.78	4,018.36	1.35	-0.65	0.442
25.00	-56.02	-24.20	0.00	-2,375.81	0.00	2,375.81	4,403.56	2,201.78	7,705.28	3,858.37	2.12	-0.81	0.434
30.00	-53.57	-23.98	0.00	-2,254.83	0.00	2,254.83	4,302.92	2,151.46	7,355.37	3,683.15	3.05	-0.98	0.428
35.00	-51.16	-23.75	0.00	-2,134.92	0.00	2,134.92	4,202.28	2,101.14	7,013.59	3,512.01	4.17	-1.14	0.420
40.00	-48.80	-23.58	0.00	-2,016.17	0.00	2,016.17	4,101.65	2,050.82	6,679.95	3,344.94	5.46	-1.31	0.412
41.16	-48.23	-23.46	0.00	-1,988.74	0.00	1,988.74	4,078.23	2,039.12	6,603.48	3,306.65	5.78	-1.35	0.410
45.00	-45.69	-23.27	0.00	-1,898.73	0.00	1,898.73	4,001.01	2,000.51	6,354.43	3,181.94	6.92	-1.48	0.399
46.83	-44.48	-23.13	0.00	-1,856.14	0.00	1,856.14	3,410.94	1,705.47	5,490.25	2,749.21	7.50	-1.55	0.435
50.00	-43.08	-22.90	0.00	-1,782.83	0.00	1,782.83	3,371.32	1,685.66	5,340.15	2,674.05	8.57	-1.65	0.427
55.00	-40.92	-22.60	0.00	-1,668.33	0.00	1,668.33	3,307.92	1,653.96	5,106.10	2,556.85	10.39	-1.83	0.412
60.00	-38.78	-22.28	0.00	-1,555.35	0.00	1,555.35	3,242.50	1,621.25	4,874.14	2,440.69	12.41	-2.01	0.397
65.00	-36.66	-21.94	0.00	-1,443.97	0.00	1,443.97	3,156.24	1,578.12	4,616.98	2,311.92	14.60	-2.18	0.384
70.00	-34.58	-21.59	0.00	-1,334.27	0.00	1,334.27	3,069.98	1,534.99	4,366.78	2,186.64	16.98	-2.36	0.369
75.00	-32.35	-21.04	0.00	-1,226.31	0.00	1,226.31	2,983.72	1,491.86	4,123.56	2,064.84	19.54	-2.53	0.354
80.00	-30.33	-20.76	0.00	-1,121.12	0.00	1,121.12	2,897.46	1,448.73	3,887.31	1,946.54	22.28	-2.70	0.337
81.62	-29.67	-20.58	0.00	-1,087.42	0.00	1,087.42	2,869.45	1,434.73	3,812.10	1,908.88	23.21	-2.75	0.332
85.00	-27.88	-20.35	0.00	-1,017.92	0.00	1,017.92	2,811.20	1,405.60	3,658.02	1,831.73	25.20	-2.86	0.315
86.37	-27.15	-20.16	0.00	-989.97	0.00	989.97	2,342.68	1,171.34	3,095.01	1,549.81	26.03	-2.91	0.342
90.00	-25.79	-19.83	0.00	-916.84	0.00	916.84	2,304.43	1,152.21	2,976.95	1,490.69	28.28	-3.02	0.324
95.00	-23.95	-19.42	0.00	-817.68	0.00	817.68	2,249.56	1,124.78	2,815.20	1,409.69	31.53	-3.19	0.299
100.00	-21.95	-18.65	0.00	-720.03	0.00	720.03	2,177.68	1,088.84	2,637.27	1,320.60	34.96	-3.34	0.275
105.00	-20.17	-18.38	0.00	-626.78	0.00	626.78	2,105.79	1,052.90	2,465.16	1,234.41	38.53	-3.49	0.250
105.13	-20.11	-18.21	0.00	-624.48	0.00	624.48	2,103.99	1,052.00	2,460.93	1,232.29	38.63	-3.49	0.250
105.13	-20.11	-18.21	0.00	-624.48	0.00	624.48	2,103.99	1,052.00	2,460.93	1,232.29	38.63	-3.49	0.517
110.00	-18.76	-17.84	0.00	-535.69	0.00	535.69	2,033.91	1,016.95	2,298.85	1,151.13	42.26	-3.62	0.475
115.00	-17.52	-17.50	0.00	-446.49	0.00	446.49	1,962.02	981.01	2,138.35	1,070.76	46.20	-3.89	0.426
120.00	-13.98	-14.82	0.00	-358.98	0.00	358.98	1,890.14	945.07	1,983.66	993.30	50.40	-4.13	0.369
125.00	-13.12	-14.62	0.00	-284.89	0.00	284.89	1,818.26	909.13	1,834.77	918.75	54.84	-4.35	0.318
125.12	-13.08	-14.51	0.00	-283.09	0.00	283.09	1,816.48	908.24	1,831.17	916.95	54.96	-4.35	0.316
128.87	-12.15	-14.31	0.00	-228.67	0.00	228.67	1,443.09	721.55	1,448.31	725.23	58.43	-4.50	0.324
130.00	-11.98	-14.21	0.00	-212.55	0.00	212.55	1,430.26	715.13	1,422.41	712.26	59.50	-4.54	0.307
132.00	-9.79	-11.84	0.00	-184.13	0.00	184.13	1,407.26	703.63	1,376.79	689.42	61.42	-4.62	0.274
135.00	-9.39	-11.58	0.00	-148.61	0.00	148.61	1,372.75	686.38	1,309.76	655.86	64.35	-4.72	0.234
140.00	-8.75	-11.30	0.00	-90.69	0.00	90.69	1,315.24	657.62	1,201.77	601.78	69.37	-4.86	0.158
143.00	-5.41	-6.73	0.00	-56.78	0.00	56.78	1,280.74	640.37	1,139.20	570.45	72.44	-4.91	0.104
145.00	-5.20	-6.56	0.00	-43.33	0.00	43.33	1,257.74	628.87	1,098.42	550.03	74.50	-4.94	0.083
148.00	0.00	-6.09	0.00	-23.65	0.00	23.65	1,223.23	611.62	1,038.64	520.09	77.61	-4.97	0.046

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:42 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 23 Iterations

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

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		169.3	0.0					0.0	0.0	169.3	0.0	0.0	0.0
5.00		335.1	1,000.9					0.0	601.2	335.1	1,602.1	0.0	0.0
10.00		328.2	980.2					0.0	601.2	328.2	1,581.4	0.0	0.0
15.00		321.2	959.4					0.0	886.6	321.2	1,846.1	0.0	0.0
20.00		314.3	938.7					0.0	886.6	314.3	1,825.3	0.0	0.0
25.00		307.3	918.0					0.0	886.6	307.3	1,804.6	0.0	0.0
30.00		303.9	897.2					0.0	886.6	303.9	1,783.8	0.0	0.0
35.00		306.7	876.5					0.0	886.6	306.7	1,763.1	0.0	0.0
40.00		190.9	855.7					0.0	886.6	190.9	1,742.4	0.0	0.0
41.16	Bot - Section 2	158.7	196.1					0.0	206.3	158.7	402.4	0.0	0.0
45.00		181.1	1,197.8					0.0	680.3	181.1	1,878.2	0.0	0.0
46.83	Top - Section 1	160.5	563.3					0.0	324.5	160.5	887.9	0.0	0.0
50.00		263.0	449.8					0.0	562.1	263.0	1,011.9	0.0	0.0
55.00		322.3	695.0					0.0	886.6	322.3	1,581.6	0.0	0.0
60.00		322.0	677.2					0.0	886.6	322.0	1,563.8	0.0	0.0
65.00		320.8	659.4					0.0	886.6	320.8	1,546.0	0.0	0.0
70.00		318.8	641.6					0.0	886.6	318.8	1,528.2	0.0	0.0
75.00	Appurtenance(s)	316.1	623.8	178.3	0.0	0.0	135.5	0.0	886.6	494.4	1,646.0	0.0	0.0
80.00		208.0	606.1					0.0	886.0	208.0	1,492.0	0.0	0.0
81.62	Bot - Section 3	157.5	192.9					0.0	287.6	157.5	480.6	0.0	0.0
85.00		150.0	731.8					0.0	598.3	150.0	1,330.2	0.0	0.0
86.37	Top - Section 2	156.4	293.4					0.0	243.3	156.4	536.7	0.0	0.0
90.00		267.4	350.9					0.0	642.6	267.4	993.5	0.0	0.0
95.00		305.7	471.1					0.0	886.0	305.7	1,357.0	0.0	0.0
100.00	Appurtenance(s)	300.4	456.2	338.1	0.0	537.9	158.8	0.0	886.0	638.5	1,501.0	0.0	0.0
105.00		152.5	441.4					0.0	884.5	152.5	1,325.9	0.0	0.0
105.13	Reinf. Top	145.9	10.8					0.0	22.1	145.9	33.0	0.0	0.0
110.00		284.9	415.8					0.0	569.3	284.9	985.0	0.0	0.0
115.00		282.0	411.8					0.0	478.7	282.0	890.4	0.0	0.0
120.00	Appurtenance(s)	275.1	397.0	2,173.9	0.0	0.0	2,072.4	0.0	283.3	2,449.1	2,752.7	0.0	0.0
125.00		139.1	382.2					0.0	254.6	139.1	636.8	0.0	0.0
125.12	Bot - Section 4	104.7	9.2					0.0	6.3	104.7	15.5	0.0	0.0
128.87	Top - Section 3	131.4	503.0					0.0	191.0	131.4	694.0	0.0	0.0
130.00		82.9	66.7					0.0	57.4	82.9	124.1	0.0	0.0
132.00	Appurtenance(s)	131.0	117.0	2,046.0	0.0	0.0	1,544.7	0.0	101.9	2,176.9	1,763.5	0.0	0.0
135.00		205.1	171.9					0.0	124.2	205.1	296.1	0.0	0.0
140.00		201.2	277.0					0.0	207.0	201.2	484.0	0.0	0.0
143.00	Appurtenance(s)	122.9	160.5	4,125.9	0.0	0.0	2,505.1	0.0	124.2	4,248.7	2,789.8	0.0	0.0
145.00		120.3	104.6					0.0	60.4	120.3	165.0	0.0	0.0
148.00	Appurtenance(s)	71.7	153.4	5,173.5	0.0	13,753.9	3,847.8	0.0	90.6	5,245.2	4,091.8	0.0	0.0
								Totals:		22,972.0	50,733.5	0.00	0.00

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:47 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.92	-23.69	0.00	-2,827.34	0.00	2,827.34	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.444
5.00	-49.25	-23.49	0.00	-2,708.87	0.00	2,708.87	4,702.37	2,351.19	8,987.95	4,500.65	0.08	-0.15	0.437
10.00	-47.61	-23.28	0.00	-2,591.44	0.00	2,591.44	4,630.27	2,315.13	8,663.09	4,337.98	0.32	-0.30	0.431
15.00	-45.71	-23.07	0.00	-2,475.04	0.00	2,475.04	4,557.03	2,278.52	8,341.98	4,177.19	0.72	-0.45	0.423
20.00	-43.82	-22.86	0.00	-2,359.70	0.00	2,359.70	4,482.67	2,241.34	8,024.78	4,018.36	1.28	-0.61	0.416
25.00	-41.96	-22.64	0.00	-2,245.42	0.00	2,245.42	4,403.56	2,201.78	7,705.28	3,858.37	2.00	-0.77	0.408
30.00	-40.12	-22.42	0.00	-2,132.22	0.00	2,132.22	4,302.92	2,151.46	7,355.37	3,683.15	2.88	-0.92	0.402
35.00	-38.30	-22.19	0.00	-2,020.10	0.00	2,020.10	4,202.28	2,101.14	7,013.59	3,512.01	3.93	-1.08	0.396
40.00	-36.53	-22.03	0.00	-1,909.15	0.00	1,909.15	4,101.65	2,050.82	6,679.95	3,344.94	5.15	-1.24	0.389
41.16	-36.10	-21.91	0.00	-1,883.52	0.00	1,883.52	4,078.23	2,039.12	6,603.48	3,306.65	5.46	-1.28	0.387
45.00	-34.19	-21.74	0.00	-1,799.46	0.00	1,799.46	4,001.01	2,000.51	6,354.43	3,181.94	6.54	-1.40	0.377
46.83	-33.27	-21.61	0.00	-1,759.67	0.00	1,759.67	3,410.94	1,705.47	5,490.25	2,749.21	7.09	-1.46	0.411
50.00	-32.22	-21.39	0.00	-1,691.19	0.00	1,691.19	3,371.32	1,685.66	5,340.15	2,674.05	8.09	-1.56	0.403
55.00	-30.58	-21.11	0.00	-1,584.23	0.00	1,584.23	3,307.92	1,653.96	5,106.10	2,556.85	9.82	-1.73	0.390
60.00	-28.97	-20.83	0.00	-1,478.66	0.00	1,478.66	3,242.50	1,621.25	4,874.14	2,440.69	11.73	-1.90	0.376
65.00	-27.38	-20.53	0.00	-1,374.52	0.00	1,374.52	3,156.24	1,578.12	4,616.98	2,311.92	13.80	-2.07	0.364
70.00	-25.80	-20.23	0.00	-1,271.86	0.00	1,271.86	3,069.98	1,534.99	4,366.78	2,186.64	16.06	-2.23	0.350
75.00	-24.12	-19.74	0.00	-1,170.71	0.00	1,170.71	2,983.72	1,491.86	4,123.56	2,064.84	18.48	-2.40	0.336
80.00	-22.61	-19.51	0.00	-1,072.01	0.00	1,072.01	2,897.46	1,448.73	3,887.31	1,946.54	21.08	-2.56	0.321
81.62	-22.11	-19.36	0.00	-1,040.34	0.00	1,040.34	2,869.45	1,434.73	3,812.10	1,908.88	21.96	-2.61	0.316
85.00	-20.76	-19.18	0.00	-974.97	0.00	974.97	2,811.20	1,405.60	3,658.02	1,831.73	23.84	-2.72	0.301
86.37	-20.20	-19.02	0.00	-948.63	0.00	948.63	2,342.68	1,171.34	3,095.01	1,549.81	24.63	-2.76	0.326
90.00	-19.18	-18.75	0.00	-879.65	0.00	879.65	2,304.43	1,152.21	2,976.95	1,490.69	26.77	-2.87	0.310
95.00	-17.79	-18.42	0.00	-785.90	0.00	785.90	2,249.56	1,124.78	2,815.20	1,409.69	29.86	-3.03	0.286
100.00	-16.28	-17.75	0.00	-693.25	0.00	693.25	2,177.68	1,088.84	2,637.27	1,320.60	33.11	-3.18	0.264
105.00	-14.95	-17.54	0.00	-604.52	0.00	604.52	2,105.79	1,052.90	2,465.16	1,234.41	36.51	-3.32	0.240
105.13	-14.90	-17.41	0.00	-602.33	0.00	602.33	2,103.99	1,052.00	2,460.93	1,232.29	36.60	-3.32	0.240
105.13	-14.90	-17.41	0.00	-602.33	0.00	602.33	2,103.99	1,052.00	2,460.93	1,232.29	36.60	-3.32	0.496
110.00	-13.88	-17.11	0.00	-517.47	0.00	517.47	2,033.91	1,016.95	2,298.85	1,151.13	40.05	-3.45	0.457
115.00	-12.93	-16.83	0.00	-431.92	0.00	431.92	1,962.02	981.01	2,138.35	1,070.76	43.80	-3.70	0.410
120.00	-10.30	-14.24	0.00	-347.77	0.00	347.77	1,890.14	945.07	1,983.66	993.30	47.81	-3.94	0.356
125.00	-9.65	-14.08	0.00	-276.56	0.00	276.56	1,818.26	909.13	1,834.77	918.75	52.05	-4.15	0.307
125.12	-9.62	-13.98	0.00	-274.83	0.00	274.83	1,816.48	908.24	1,831.17	916.95	52.15	-4.15	0.305
128.87	-8.92	-13.81	0.00	-222.39	0.00	222.39	1,443.09	721.55	1,448.31	725.23	55.47	-4.29	0.313
130.00	-8.78	-13.73	0.00	-206.82	0.00	206.82	1,430.26	715.13	1,422.41	712.26	56.49	-4.33	0.297
132.00	-7.17	-11.44	0.00	-179.36	0.00	179.36	1,407.26	703.63	1,376.79	689.42	58.32	-4.41	0.266
135.00	-6.87	-11.23	0.00	-145.05	0.00	145.05	1,372.75	686.38	1,309.76	655.86	61.12	-4.51	0.226
140.00	-6.39	-11.00	0.00	-88.92	0.00	88.92	1,315.24	657.62	1,201.77	601.78	65.92	-4.64	0.153
143.00	-3.95	-6.54	0.00	-55.93	0.00	55.93	1,280.74	640.37	1,139.20	570.45	68.86	-4.70	0.101
145.00	-3.79	-6.41	0.00	-42.86	0.00	42.86	1,257.74	628.87	1,098.42	550.03	70.83	-4.73	0.081
148.00	0.00	-6.07	0.00	-23.65	0.00	23.65	1,223.23	611.62	1,038.64	520.09	73.81	-4.76	0.046

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:48 PM

Customer: AT&T MOBILITY

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

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

Dead Load Factor :1.20 | Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		59.2	0.0					0.0	0.0	59.2	0.0	0.0	0.0
5.00		117.5	1,684.4					0.0	865.3	117.5	2,549.7	0.0	0.0
10.00		115.7	1,690.5					0.0	872.5	115.7	2,563.0	0.0	0.0
15.00		113.6	1,675.2					0.0	1,546.8	113.6	3,222.0	0.0	0.0
20.00		111.5	1,652.9					0.0	1,560.7	111.5	3,213.6	0.0	0.0
25.00		109.3	1,626.9					0.0	1,571.6	109.3	3,198.5	0.0	0.0
30.00		108.4	1,598.7					0.0	1,580.6	108.4	3,179.3	0.0	0.0
35.00		109.7	1,568.9					0.0	1,588.2	109.7	3,157.1	0.0	0.0
40.00		68.4	1,537.9					0.0	1,594.9	68.4	3,132.9	0.0	0.0
41.16	Bot - Section 2	56.9	354.1					0.0	372.0	56.9	726.1	0.0	0.0
45.00		65.0	1,904.4					0.0	1,228.9	65.0	3,133.4	0.0	0.0
46.83	Top - Section 1	57.7	897.4					0.0	587.3	57.7	1,484.7	0.0	0.0
50.00		94.7	850.7					0.0	1,019.0	94.7	1,869.7	0.0	0.0
55.00		116.3	1,316.2					0.0	1,611.2	116.3	2,927.5	0.0	0.0
60.00		116.5	1,286.5					0.0	1,615.8	116.5	2,902.3	0.0	0.0
65.00		116.4	1,256.4					0.0	1,620.0	116.4	2,876.4	0.0	0.0
70.00		116.0	1,225.9					0.0	1,623.9	116.0	2,849.8	0.0	0.0
75.00	Appurtenance(s)	115.3	1,195.0	48.0	0.0	0.0	221.4	0.0	1,627.6	163.3	3,044.0	0.0	0.0
80.00		76.0	1,163.9					0.0	1,609.7	76.0	2,773.6	0.0	0.0
81.62	Bot - Section 3	57.7	372.2					0.0	523.3	57.7	895.5	0.0	0.0
85.00		54.9	1,215.4					0.0	1,089.5	54.9	2,304.9	0.0	0.0
86.37	Top - Section 2	57.4	488.2					0.0	443.5	57.4	931.7	0.0	0.0
90.00		98.4	719.5					0.0	1,172.2	98.4	1,891.7	0.0	0.0
95.00		112.8	966.5					0.0	1,618.5	112.8	2,585.0	0.0	0.0
100.00	Appurtenance(s)	111.3	938.4	101.2	0.0	220.0	329.9	0.0	1,621.1	212.5	2,889.4	0.0	0.0
105.00		56.6	910.1					0.0	1,596.8	56.6	2,506.9	0.0	0.0
105.13	Reinf. Top	54.3	22.5					0.0	39.9	54.3	62.5	0.0	0.0
110.00		106.4	859.4					0.0	1,168.3	106.4	2,027.7	0.0	0.0
115.00		105.8	853.1					0.0	1,027.2	105.8	1,880.3	0.0	0.0
120.00	Appurtenance(s)	103.6	824.3	562.5	0.0	0.0	4,762.4	0.0	707.3	666.1	6,293.9	0.0	0.0
125.00		52.5	795.4					0.0	582.5	52.5	1,377.9	0.0	0.0
125.12	Bot - Section 4	39.6	19.4					0.0	14.4	39.6	33.8	0.0	0.0
128.87	Top - Section 3	49.8	883.9					0.0	437.6	49.8	1,321.5	0.0	0.0
130.00		31.5	152.6					0.0	131.6	31.5	284.2	0.0	0.0
132.00	Appurtenance(s)	49.9	267.4	529.4	0.0	0.0	3,818.4	0.0	233.7	579.3	4,319.5	0.0	0.0
135.00		78.4	392.9					0.0	312.7	78.4	705.6	0.0	0.0
140.00		77.2	632.4					0.0	522.0	77.2	1,154.4	0.0	0.0
143.00	Appurtenance(s)	47.3	368.5	983.2	0.0	0.0	7,585.2	0.0	313.6	1,030.6	8,267.4	0.0	0.0
145.00		46.5	241.0					0.0	160.0	46.5	401.0	0.0	0.0
148.00	Appurtenance(s)	27.8	353.2	1,224.3	0.0	3,023.5	10,943.1	0.0	240.2	1,252.1	11,536.5	0.0	0.0
									Totals:	6,712.23	102,474.	0.00	0.00

Site Number: 302515 Code: ANSI/TIA-222-G

Site Name: SMFR - North, CT Engineering Number:OAA720650_C3_02 2/21/2018 12:44:53 PM

Customer: AT&T MOBILITY

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

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

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-103.58	-6.87	0.00	-819.25	0.00	819.25	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.143
5.00	-101.02	-6.83	0.00	-784.89	0.00	784.89	4,702.37	2,351.19	8,987.95	4,500.65	0.02	-0.04	0.141
10.00	-98.45	-6.79	0.00	-750.74	0.00	750.74	4,630.27	2,315.13	8,663.09	4,337.98	0.09	-0.09	0.139
15.00	-95.23	-6.74	0.00	-716.80	0.00	716.80	4,557.03	2,278.52	8,341.98	4,177.19	0.21	-0.13	0.136
20.00	-92.01	-6.69	0.00	-683.09	0.00	683.09	4,482.67	2,241.34	8,024.78	4,018.36	0.37	-0.18	0.134
25.00	-88.81	-6.64	0.00	-649.62	0.00	649.62	4,403.56	2,201.78	7,705.28	3,858.37	0.58	-0.22	0.131
30.00	-85.62	-6.59	0.00	-616.40	0.00	616.40	4,302.92	2,151.46	7,355.37	3,683.15	0.84	-0.27	0.129
35.00	-82.46	-6.53	0.00	-583.45	0.00	583.45	4,202.28	2,101.14	7,013.59	3,512.01	1.14	-0.31	0.127
40.00	-79.32	-6.48	0.00	-550.80	0.00	550.80	4,101.65	2,050.82	6,679.95	3,344.94	1.49	-0.36	0.124
41.16	-78.60	-6.45	0.00	-543.26	0.00	543.26	4,078.23	2,039.12	6,603.48	3,306.65	1.58	-0.37	0.124
45.00	-75.46	-6.40	0.00	-518.50	0.00	518.50	4,001.01	2,000.51	6,354.43	3,181.94	1.89	-0.41	0.121
46.83	-73.97	-6.36	0.00	-506.78	0.00	506.78	3,410.94	1,705.47	5,490.25	2,749.21	2.05	-0.42	0.132
50.00	-72.10	-6.30	0.00	-486.61	0.00	486.61	3,371.32	1,685.66	5,340.15	2,674.05	2.34	-0.45	0.129
55.00	-69.17	-6.22	0.00	-455.09	0.00	455.09	3,307.92	1,653.96	5,106.10	2,556.85	2.84	-0.50	0.125
60.00	-66.26	-6.13	0.00	-423.98	0.00	423.98	3,242.50	1,621.25	4,874.14	2,440.69	3.39	-0.55	0.120
65.00	-63.38	-6.04	0.00	-393.31	0.00	393.31	3,156.24	1,578.12	4,616.98	2,311.92	3.99	-0.60	0.116
70.00	-60.53	-5.94	0.00	-363.10	0.00	363.10	3,069.98	1,534.99	4,366.78	2,186.64	4.64	-0.64	0.112
75.00	-57.48	-5.79	0.00	-333.38	0.00	333.38	2,983.72	1,491.86	4,123.56	2,064.84	5.34	-0.69	0.107
80.00	-54.71	-5.71	0.00	-304.42	0.00	304.42	2,897.46	1,448.73	3,887.31	1,946.54	6.09	-0.74	0.102
81.62	-53.81	-5.66	0.00	-295.15	0.00	295.15	2,869.45	1,434.73	3,812.10	1,908.88	6.34	-0.75	0.101
85.00	-51.50	-5.60	0.00	-276.03	0.00	276.03	2,811.20	1,405.60	3,658.02	1,831.73	6.89	-0.78	0.096
86.37	-50.57	-5.54	0.00	-268.35	0.00	268.35	2,342.68	1,171.34	3,095.01	1,549.81	7.11	-0.79	0.104
90.00	-48.68	-5.45	0.00	-248.24	0.00	248.24	2,304.43	1,152.21	2,976.95	1,490.69	7.73	-0.82	0.099
95.00	-46.09	-5.34	0.00	-220.98	0.00	220.98	2,249.56	1,124.78	2,815.20	1,409.69	8.62	-0.87	0.092
100.00	-43.20	-5.11	0.00	-194.09	0.00	194.09	2,177.68	1,088.84	2,637.27	1,320.60	9.55	-0.91	0.084
105.00	-40.69	-5.03	0.00	-168.54	0.00	168.54	2,105.79	1,052.90	2,465.16	1,234.41	10.52	-0.95	0.077
105.13	-40.63	-4.98	0.00	-167.92	0.00	167.92	2,103.99	1,052.00	2,460.93	1,232.29	10.55	-0.95	0.077
105.13	-40.63	-4.98	0.00	-167.92	0.00	167.92	2,103.99	1,052.00	2,460.93	1,232.29	10.55	-0.95	0.156
110.00	-38.60	-4.88	0.00	-143.62	0.00	143.62	2,033.91	1,016.95	2,298.85	1,151.13	11.54	-0.99	0.144
115.00	-36.72	-4.78	0.00	-119.23	0.00	119.23	1,962.02	981.01	2,138.35	1,070.76	12.61	-1.06	0.130
120.00	-30.43	-4.03	0.00	-95.32	0.00	95.32	1,890.14	945.07	1,983.66	993.30	13.75	-1.12	0.112
125.00	-29.05	-3.96	0.00	-75.17	0.00	75.17	1,818.26	909.13	1,834.77	918.75	14.96	-1.18	0.098
125.12	-29.02	-3.93	0.00	-74.68	0.00	74.68	1,816.48	908.24	1,831.17	916.95	14.99	-1.18	0.097
128.87	-27.70	-3.87	0.00	-59.93	0.00	59.93	1,443.09	721.55	1,448.31	725.23	15.94	-1.22	0.102
130.00	-27.41	-3.84	0.00	-55.57	0.00	55.57	1,430.26	715.13	1,422.41	712.26	16.22	-1.23	0.097
132.00	-23.11	-3.17	0.00	-47.90	0.00	47.90	1,407.26	703.63	1,376.79	689.42	16.74	-1.25	0.086
135.00	-22.40	-3.09	0.00	-38.37	0.00	38.37	1,372.75	686.38	1,309.76	655.86	17.54	-1.28	0.075
140.00	-21.25	-3.00	0.00	-22.91	0.00	22.91	1,315.24	657.62	1,201.77	601.78	18.90	-1.31	0.054
143.00	-13.01	-1.78	0.00	-13.91	0.00	13.91	1,280.74	640.37	1,139.20	570.45	19.73	-1.33	0.035
145.00	-12.61	-1.73	0.00	-10.35	0.00	10.35	1,257.74	628.87	1,098.42	550.03	20.28	-1.33	0.029
148.00	0.00	-1.43	0.00	-5.17	0.00	5.17	1,223.23	611.62	1,038.64	520.09	21.12	-1.34	0.010

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:53 PM

Customer: AT&T MOBILITY

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

Gust Response Factor :1.10 | Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		44.0	0.0					0.0	0.0	44.0	0.0	0.0	0.0
5.00		87.2	1,112.1					0.0	668.0	87.2	1,780.1	0.0	0.0
10.00		85.4	1,089.1					0.0	668.0	85.4	1,757.1	0.0	0.0
15.00		83.6	1,066.1					0.0	985.1	83.6	2,051.2	0.0	0.0
20.00		81.8	1,043.0					0.0	985.1	81.8	2,028.1	0.0	0.0
25.00		79.9	1,020.0					0.0	985.1	79.9	2,005.1	0.0	0.0
30.00		79.1	996.9					0.0	985.1	79.1	1,982.1	0.0	0.0
35.00		79.8	973.9					0.0	985.1	79.8	1,959.0	0.0	0.0
40.00		49.7	950.8					0.0	985.1	49.7	1,936.0	0.0	0.0
41.16	Bot - Section 2	41.3	217.9					0.0	229.2	41.3	447.1	0.0	0.0
45.00		47.1	1,330.9					0.0	755.9	47.1	2,086.9	0.0	0.0
46.83	Top - Section 1	41.8	625.9					0.0	360.6	41.8	986.5	0.0	0.0
50.00		68.4	499.8					0.0	624.6	68.4	1,124.4	0.0	0.0
55.00		83.9	772.2					0.0	985.1	83.9	1,757.3	0.0	0.0
60.00		83.8	752.4					0.0	985.1	83.8	1,737.6	0.0	0.0
65.00		83.4	732.7					0.0	985.1	83.4	1,717.8	0.0	0.0
70.00		82.9	712.9					0.0	985.1	82.9	1,698.1	0.0	0.0
75.00	Appurtenance(s)	82.2	693.2	46.4	0.0	0.0	150.6	0.0	985.1	128.6	1,828.9	0.0	0.0
80.00		54.1	673.4					0.0	984.4	54.1	1,657.8	0.0	0.0
81.62	Bot - Section 3	41.0	214.4					0.0	319.6	41.0	534.0	0.0	0.0
85.00		39.0	813.2					0.0	664.8	39.0	1,478.0	0.0	0.0
86.37	Top - Section 2	40.7	326.0					0.0	270.4	40.7	596.4	0.0	0.0
90.00		69.6	389.9					0.0	714.0	69.6	1,103.9	0.0	0.0
95.00		79.5	523.4					0.0	984.4	79.5	1,507.8	0.0	0.0
100.00	Appurtenance(s)	78.2	506.9	87.9	0.0	139.9	176.5	0.0	984.4	166.1	1,667.8	0.0	0.0
105.00		39.7	490.5					0.0	982.7	39.7	1,473.2	0.0	0.0
105.13	Reinf. Top	37.9	12.1					0.0	24.6	37.9	36.6	0.0	0.0
110.00		74.1	462.0					0.0	632.5	74.1	1,094.5	0.0	0.0
115.00		73.4	457.5					0.0	531.8	73.4	989.4	0.0	0.0
120.00	Appurtenance(s)	71.6	441.1	565.5	0.0	0.0	2,302.7	0.0	314.7	637.1	3,058.5	0.0	0.0
125.00		36.2	424.6					0.0	282.9	36.2	707.6	0.0	0.0
125.12	Bot - Section 4	27.2	10.3					0.0	7.0	27.2	17.2	0.0	0.0
128.87	Top - Section 3	34.2	558.9					0.0	212.2	34.2	771.1	0.0	0.0
130.00		21.6	74.1					0.0	63.8	21.6	137.9	0.0	0.0
132.00	Appurtenance(s)	34.1	130.0	532.2	0.0	0.0	1,716.3	0.0	113.2	566.3	1,959.4	0.0	0.0
135.00		53.4	191.0					0.0	138.0	53.4	329.0	0.0	0.0
140.00		52.3	307.8					0.0	230.0	52.3	537.8	0.0	0.0
143.00	Appurtenance(s)	32.0	178.3	1,073.3	0.0	0.0	2,783.4	0.0	138.0	1,105.3	3,099.7	0.0	0.0
145.00		31.3	116.3					0.0	67.1	31.3	183.4	0.0	0.0
148.00	Appurtenance(s)	18.6	170.4	1,345.9	0.0	3,578.0	4,275.3	0.0	100.7	1,364.5	4,546.4	0.0	0.0
									Totals:	5,976.07	56,370.6	0.00	0.00

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:59 PM

Customer: AT&T MOBILITY

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

Gust Response Factor :1.10 | Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-56.61	-6.17	0.00	-739.63	0.00	739.63	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.123
5.00	-54.82	-6.12	0.00	-708.81	0.00	708.81	4,702.37	2,351.19	8,987.95	4,500.65	0.02	-0.04	0.121
10.00	-53.06	-6.07	0.00	-678.23	0.00	678.23	4,630.27	2,315.13	8,663.09	4,337.98	0.08	-0.08	0.119
15.00	-51.01	-6.01	0.00	-647.90	0.00	647.90	4,557.03	2,278.52	8,341.98	4,177.19	0.19	-0.12	0.117
20.00	-48.98	-5.96	0.00	-617.84	0.00	617.84	4,482.67	2,241.34	8,024.78	4,018.36	0.33	-0.16	0.115
25.00	-46.97	-5.91	0.00	-588.03	0.00	588.03	4,403.56	2,201.78	7,705.28	3,858.37	0.52	-0.20	0.113
30.00	-44.98	-5.86	0.00	-558.48	0.00	558.48	4,302.92	2,151.46	7,355.37	3,683.15	0.75	-0.24	0.111
35.00	-43.02	-5.80	0.00	-529.20	0.00	529.20	4,202.28	2,101.14	7,013.59	3,512.01	1.03	-0.28	0.110
40.00	-41.08	-5.76	0.00	-500.22	0.00	500.22	4,101.65	2,050.82	6,679.95	3,344.94	1.35	-0.32	0.107
41.16	-40.63	-5.73	0.00	-493.52	0.00	493.52	4,078.23	2,039.12	6,603.48	3,306.65	1.43	-0.33	0.107
45.00	-38.54	-5.68	0.00	-471.55	0.00	471.55	4,001.01	2,000.51	6,354.43	3,181.94	1.71	-0.37	0.104
46.83	-37.55	-5.65	0.00	-461.15	0.00	461.15	3,410.94	1,705.47	5,490.25	2,749.21	1.86	-0.38	0.114
50.00	-36.43	-5.60	0.00	-443.24	0.00	443.24	3,371.32	1,685.66	5,340.15	2,674.05	2.12	-0.41	0.111
55.00	-34.67	-5.53	0.00	-415.26	0.00	415.26	3,307.92	1,653.96	5,106.10	2,556.85	2.57	-0.45	0.108
60.00	-32.92	-5.45	0.00	-387.63	0.00	387.63	3,242.50	1,621.25	4,874.14	2,440.69	3.07	-0.50	0.104
65.00	-31.20	-5.38	0.00	-360.37	0.00	360.37	3,156.24	1,578.12	4,616.98	2,311.92	3.61	-0.54	0.100
70.00	-29.50	-5.30	0.00	-333.49	0.00	333.49	3,069.98	1,534.99	4,366.78	2,186.64	4.21	-0.58	0.097
75.00	-27.67	-5.17	0.00	-306.99	0.00	306.99	2,983.72	1,491.86	4,123.56	2,064.84	4.84	-0.63	0.093
80.00	-26.01	-5.11	0.00	-281.13	0.00	281.13	2,897.46	1,448.73	3,887.31	1,946.54	5.52	-0.67	0.089
81.62	-25.48	-5.07	0.00	-272.83	0.00	272.83	2,869.45	1,434.73	3,812.10	1,908.88	5.75	-0.68	0.087
85.00	-24.00	-5.03	0.00	-255.70	0.00	255.70	2,811.20	1,405.60	3,658.02	1,831.73	6.25	-0.71	0.083
86.37	-23.40	-4.99	0.00	-248.80	0.00	248.80	2,342.68	1,171.34	3,095.01	1,549.81	6.45	-0.72	0.090
90.00	-22.29	-4.92	0.00	-230.72	0.00	230.72	2,304.43	1,152.21	2,976.95	1,490.69	7.01	-0.75	0.086
95.00	-20.78	-4.83	0.00	-206.14	0.00	206.14	2,249.56	1,124.78	2,815.20	1,409.69	7.82	-0.79	0.079
100.00	-19.12	-4.65	0.00	-181.85	0.00	181.85	2,177.68	1,088.84	2,637.27	1,320.60	8.67	-0.83	0.073
105.00	-17.64	-4.60	0.00	-158.59	0.00	158.59	2,105.79	1,052.90	2,465.16	1,234.41	9.57	-0.87	0.067
105.13	-17.60	-4.56	0.00	-158.01	0.00	158.01	2,103.99	1,052.00	2,460.93	1,232.29	9.59	-0.87	0.067
105.13	-17.60	-4.56	0.00	-158.01	0.00	158.01	2,103.99	1,052.00	2,460.93	1,232.29	9.59	-0.87	0.137
110.00	-16.51	-4.49	0.00	-135.76	0.00	135.76	2,033.91	1,016.95	2,298.85	1,151.13	10.50	-0.90	0.126
115.00	-15.51	-4.42	0.00	-113.32	0.00	113.32	1,962.02	981.01	2,138.35	1,070.76	11.48	-0.97	0.114
120.00	-12.46	-3.74	0.00	-91.25	0.00	91.25	1,890.14	945.07	1,983.66	993.30	12.53	-1.03	0.098
125.00	-11.75	-3.69	0.00	-72.56	0.00	72.56	1,818.26	909.13	1,834.77	918.75	13.64	-1.09	0.085
125.12	-11.74	-3.67	0.00	-72.10	0.00	72.10	1,816.48	908.24	1,831.17	916.95	13.67	-1.09	0.085
128.87	-10.96	-3.63	0.00	-58.34	0.00	58.34	1,443.09	721.55	1,448.31	725.23	14.54	-1.13	0.088
130.00	-10.83	-3.60	0.00	-54.25	0.00	54.25	1,430.26	715.13	1,422.41	712.26	14.81	-1.14	0.084
132.00	-8.88	-3.00	0.00	-47.04	0.00	47.04	1,407.26	703.63	1,376.79	689.42	15.29	-1.16	0.075
135.00	-8.55	-2.95	0.00	-38.03	0.00	38.03	1,372.75	686.38	1,309.76	655.86	16.02	-1.18	0.064
140.00	-8.01	-2.89	0.00	-23.30	0.00	23.30	1,315.24	657.62	1,201.77	601.78	17.28	-1.22	0.045
143.00	-4.93	-1.72	0.00	-14.63	0.00	14.63	1,280.74	640.37	1,139.20	570.45	18.05	-1.23	0.030
145.00	-4.75	-1.68	0.00	-11.20	0.00	11.20	1,257.74	628.87	1,098.42	550.03	18.57	-1.24	0.024
148.00	0.00	-1.58	0.00	-6.15	0.00	6.15	1,223.23	611.62	1,038.64	520.09	19.35	-1.25	0.012

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.25	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.27	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.50	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	56.61	k
Seismic Base Shear (E):	2.21	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	146.50	271	5,797	0.013	28	340
38	144.00	183	3,788	0.008	19	230
37	141.50	316	6,310	0.014	31	396
36	137.50	538	10,129	0.023	50	674
35	133.50	329	5,842	0.013	29	412
34	131.00	243	4,157	0.009	20	305
33	129.44	138	2,302	0.005	11	173
32	127.00	771	12,392	0.028	61	966
31	125.06	17	269	0.001	1	22
30	122.50	708	10,579	0.024	52	887
29	117.50	756	10,397	0.023	51	947
28	112.50	989	12,477	0.028	61	1,240
27	107.56	1,094	12,618	0.028	62	1,372
26	105.06	37	403	0.001	2	46
25	102.50	1,473	15,424	0.034	76	1,846
24	97.50	1,491	14,128	0.031	69	1,869
23	92.50	1,508	12,857	0.029	63	1,889
22	88.19	1,104	8,556	0.019	42	1,383
21	85.69	596	4,364	0.010	21	747
20	83.31	1,478	10,224	0.023	50	1,852
19	80.81	534	3,476	0.008	17	669
18	77.50	1,658	9,924	0.022	49	2,077
17	72.50	1,678	8,793	0.020	43	2,103

16	67.50	1,698	7,712	0.017	38	2,128
15	62.50	1,718	6,689	0.015	33	2,153
14	57.50	1,738	5,727	0.013	28	2,177
13	52.50	1,757	4,829	0.011	24	2,202
12	48.42	1,124	2,628	0.006	13	1,409
11	45.92	987	2,074	0.005	10	1,236
10	43.08	2,087	3,862	0.009	19	2,615
9	40.58	447	734	0.002	4	560
8	37.50	1,936	2,715	0.006	13	2,426
7	32.50	1,959	2,064	0.005	10	2,455
6	27.50	1,982	1,495	0.003	7	2,484
5	22.50	2,005	1,013	0.002	5	2,513
4	17.50	2,028	620	0.001	3	2,542
3	12.50	2,051	320	0.001	2	2,570
2	7.50	1,757	99	0.000	0	2,202
1	2.50	1,780	11	0.000	0	2,231
Commscope ATSBT-TOP-	160.00	5	138	0.000	1	7
Andrew E15S09P94	160.00	44	1,117	0.002	5	55
RFS ATMAP1412D-1A20	160.00	39	995	0.002	5	49
Andrew SBNHH-1D65B	160.00	152	3,879	0.009	19	191
Kaelus DBC0061F1V51-	148.00	153	3,339	0.007	16	192
Powerwave Allgon LGP	148.00	85	1,846	0.004	9	106
Raycap DC6-48-60-18-	148.00	20	436	0.001	2	25
Raycap DC6-48-60-18-	148.00	20	436	0.001	2	25
Raycap DC6-48-60-0-8	148.00	33	716	0.002	4	41
Ericsson RRUS 4478 B	148.00	180	3,921	0.009	19	225
Ericsson RRUS 11 (Ba	148.00	165	3,601	0.008	18	207
Ericsson RRUS 32	148.00	152	3,326	0.007	16	191
Ericsson RRUS 32 B2	148.00	159	3,470	0.008	17	199
Ericsson RRUS 32 B66	148.00	159	3,470	0.008	17	199
Powerwave Allgon 777	148.00	105	2,291	0.005	11	132
Pipe Mount	148.00	200	4,364	0.010	21	251
Quintel QS66512-2	148.00	333	7,266	0.016	36	417
CCI OPA-65R-LCUU-H6	148.00	219	4,779	0.011	23	274
Kathrein 80010965	148.00	293	6,389	0.014	31	367
Flat Platform w/ Han	148.00	2,000	43,643	0.097	214	2,506
RFS FD9R6004	143.00	19	379	0.001	2	23
Alcatel-Lucent RRH2X	143.00	172	3,504	0.008	17	216
Alcatel-Lucent RRH2x	143.00	227	4,620	0.010	23	284
Alcatel-Lucent RRH4x	143.00	253	5,158	0.011	25	317
RFS DB-T1-6Z-8AB-0Z	143.00	88	1,793	0.004	9	110
Antel BXA-80063-6BF-	143.00	19	391	0.001	2	24
Antel BXA-70063/6CF	143.00	34	693	0.002	3	43
Antel BXA-80080/6CF	143.00	22	448	0.001	2	28
Commscope SBNHH-1D65	143.00	203	4,131	0.009	20	254
Commscope SBNHH-1D45	143.00	247	5,028	0.011	25	309
Flat Low Profile Pla	143.00	1,500	30,558	0.068	150	1,880
KMW KMDAPS2040000 (E	132.00	48	828	0.002	4	60
KMW AM-X-WM-17-65-00	132.00	43	740	0.002	4	53
Decibel DB844H90E-XY	132.00	126	2,187	0.005	11	158
Flat Low Profile Pla	132.00	1,500	26,040	0.058	128	1,880
Box Enclosures BEN-9	120.00	4	63	0.000	0	6
Nokia FWHR	120.00	79	1,141	0.003	6	100
Alcatel-Lucent 800 M	120.00	192	2,755	0.006	14	241
Alcatel-Lucent 4x40W	120.00	273	3,917	0.009	19	342
Commscope LLPX310R-V	120.00	83	1,188	0.003	6	104
RFS APXVSPP18-C-A20	120.00	171	2,453	0.005	12	214
Flat Low Profile Pla	120.00	1,500	21,522	0.048	106	1,880
Antel BCD-87010 ___	100.00	26	264	0.001	1	33
Flat Side Arm	100.00	150	1,495	0.003	7	188
PCTEL GPS-TMG-HR-26N	75.00	1	3	0.000	0	1
Round Side Arm	75.00	150	841	0.002	4	188
		56,611	449,359	1.000	2,208	70,940

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	146.50	271	5,797	0.013	28	230
38	144.00	183	3,788	0.008	19	155
37	141.50	316	6,310	0.014	31	268
36	137.50	538	10,129	0.023	50	455
35	133.50	329	5,842	0.013	29	279
34	131.00	243	4,157	0.009	20	206
33	129.44	138	2,302	0.005	11	117
32	127.00	771	12,392	0.028	61	653
31	125.06	17	269	0.001	1	15
30	122.50	708	10,579	0.024	52	599
29	117.50	756	10,397	0.023	51	640
28	112.50	989	12,477	0.028	61	838
27	107.56	1,094	12,618	0.028	62	927
26	105.06	37	403	0.001	2	31
25	102.50	1,473	15,424	0.034	76	1,248
24	97.50	1,491	14,128	0.031	69	1,263
23	92.50	1,508	12,857	0.029	63	1,277
22	88.19	1,104	8,556	0.019	42	935
21	85.69	596	4,364	0.010	21	505
20	83.31	1,478	10,224	0.023	50	1,252
19	80.81	534	3,476	0.008	17	452
18	77.50	1,658	9,924	0.022	49	1,404
17	72.50	1,678	8,793	0.020	43	1,421
16	67.50	1,698	7,712	0.017	38	1,438
15	62.50	1,718	6,689	0.015	33	1,455
14	57.50	1,738	5,727	0.013	28	1,472
13	52.50	1,757	4,829	0.011	24	1,488
12	48.42	1,124	2,628	0.006	13	952
11	45.92	987	2,074	0.005	10	835
10	43.08	2,087	3,862	0.009	19	1,767
9	40.58	447	734	0.002	4	379
8	37.50	1,936	2,715	0.006	13	1,640
7	32.50	1,959	2,064	0.005	10	1,659
6	27.50	1,982	1,495	0.003	7	1,679
5	22.50	2,005	1,013	0.002	5	1,698
4	17.50	2,028	620	0.001	3	1,718
3	12.50	2,051	320	0.001	2	1,737
2	7.50	1,757	99	0.000	0	1,488
1	2.50	1,780	11	0.000	0	1,508
Commscope ATSBT-TOP-	160.00	5	138	0.000	1	5
Andrew E15S09P94	160.00	44	1,117	0.002	5	37
RFS ATMAP1412D-1A20	160.00	39	995	0.002	5	33
Andrew SBNHH-1D65B	160.00	152	3,879	0.009	19	129
Kaelus DBC0061F1V51-	148.00	153	3,339	0.007	16	130
Powerwave Allgon LGP	148.00	85	1,846	0.004	9	72
Raycap DC6-48-60-18-	148.00	20	436	0.001	2	17
Raycap DC6-48-60-18-	148.00	20	436	0.001	2	17
Raycap DC6-48-60-0-8	148.00	33	716	0.002	4	28
Ericsson RRUS 4478 B	148.00	180	3,921	0.009	19	152
Ericsson RRUS 11 (Ba	148.00	165	3,601	0.008	18	140
Ericsson RRUS 32	148.00	152	3,326	0.007	16	129
Ericsson RRUS 32 B2	148.00	159	3,470	0.008	17	135
Ericsson RRUS 32 B66	148.00	159	3,470	0.008	17	135
Powerwave Allgon 777	148.00	105	2,291	0.005	11	89
Pipe Mount	148.00	200	4,364	0.010	21	169
Quintel QS66512-2	148.00	333	7,266	0.016	36	282
CCI OPA-65R-LCUU-H6	148.00	219	4,779	0.011	23	185

Kathrein 80010965	148.00	293	6,389	0.014	31	248
Flat Platform w/ Han	148.00	2,000	43,643	0.097	214	1,694
RFS FD9R6004	143.00	19	379	0.001	2	16
Alcatel-Lucent RRH2X	143.00	172	3,504	0.008	17	146
Alcatel-Lucent RRH2x	143.00	227	4,620	0.010	23	192
Alcatel-Lucent RRH4x	143.00	253	5,158	0.011	25	214
RFS DB-T1-6Z-8AB-0Z	143.00	88	1,793	0.004	9	75
Antel BXA-80063-6BF-	143.00	19	391	0.001	2	16
Antel BXA-70063/6CF	143.00	34	693	0.002	3	29
Antel BXA-80080/6CF	143.00	22	448	0.001	2	19
Commscope SBNHH-1D65	143.00	203	4,131	0.009	20	172
Commscope SBNHH-1D45	143.00	247	5,028	0.011	25	209
Flat Low Profile Pla	143.00	1,500	30,558	0.068	150	1,270
KMW KMDAPS2040000 (E	132.00	48	828	0.002	4	40
KMW AM-X-WM-17-65-00	132.00	43	740	0.002	4	36
Decibel DB844H90E-XY	132.00	126	2,187	0.005	11	107
Flat Low Profile Pla	132.00	1,500	26,040	0.058	128	1,270
Box Enclosures BEN-9	120.00	4	63	0.000	0	4
Nokia FWHR	120.00	79	1,141	0.003	6	67
Alcatel-Lucent 800 M	120.00	192	2,755	0.006	14	163
Alcatel-Lucent 4x40W	120.00	273	3,917	0.009	19	231
Commscope LLPX310R-V	120.00	83	1,188	0.003	6	70
RFS APXVSPP18-C-A20	120.00	171	2,453	0.005	12	145
Flat Low Profile Pla	120.00	1,500	21,522	0.048	106	1,270
Antel BCD-87010 ___	100.00	26	264	0.001	1	22
Flat Side Arm	100.00	150	1,495	0.003	7	127
PCTEL GPS-TMG-HR-26N	75.00	1	3	0.000	0	1
Round Side Arm	75.00	150	841	0.002	4	127
		56,611	449,359	1.000	2,208	47,943

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-68.41	-2.19	0.00	-268.29	0.00	268.29	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.052
5.00	-66.21	-2.20	0.00	-257.36	0.00	257.36	4,702.37	2,351.19	8,987.95	4,500.65	0.01	-0.01	0.052
10.00	-63.63	-2.21	0.00	-246.35	0.00	246.35	4,630.27	2,315.13	8,663.09	4,337.98	0.03	-0.03	0.051
15.00	-61.09	-2.23	0.00	-235.28	0.00	235.28	4,557.03	2,278.52	8,341.98	4,177.19	0.07	-0.04	0.050
20.00	-58.58	-2.23	0.00	-224.15	0.00	224.15	4,482.67	2,241.34	8,024.78	4,018.36	0.12	-0.06	0.049
25.00	-56.10	-2.24	0.00	-212.99	0.00	212.99	4,403.56	2,201.78	7,705.28	3,858.37	0.19	-0.07	0.048
30.00	-53.64	-2.24	0.00	-201.80	0.00	201.80	4,302.92	2,151.46	7,355.37	3,683.15	0.27	-0.09	0.047
35.00	-51.21	-2.23	0.00	-190.61	0.00	190.61	4,202.28	2,101.14	7,013.59	3,512.01	0.37	-0.10	0.046
40.00	-50.65	-2.24	0.00	-179.44	0.00	179.44	4,101.65	2,050.82	6,679.95	3,344.94	0.49	-0.12	0.045
41.16	-48.04	-2.22	0.00	-176.83	0.00	176.83	4,078.23	2,039.12	6,603.48	3,306.65	0.52	-0.12	0.044
45.00	-46.80	-2.21	0.00	-168.32	0.00	168.32	4,001.01	2,000.51	6,354.43	3,181.94	0.62	-0.13	0.043
46.83	-45.39	-2.20	0.00	-164.27	0.00	164.27	3,410.94	1,705.47	5,490.25	2,749.21	0.67	-0.14	0.047
50.00	-43.19	-2.18	0.00	-157.28	0.00	157.28	3,371.32	1,685.66	5,340.15	2,674.05	0.77	-0.15	0.046
55.00	-41.01	-2.16	0.00	-146.36	0.00	146.36	3,307.92	1,653.96	5,106.10	2,556.85	0.93	-0.16	0.044
60.00	-38.86	-2.13	0.00	-135.56	0.00	135.56	3,242.50	1,621.25	4,874.14	2,440.69	1.11	-0.18	0.042
65.00	-36.73	-2.10	0.00	-124.90	0.00	124.90	3,156.24	1,578.12	4,616.98	2,311.92	1.31	-0.19	0.040
70.00	-34.63	-2.06	0.00	-114.41	0.00	114.41	3,069.98	1,534.99	4,366.78	2,186.64	1.52	-0.21	0.039
75.00	-32.36	-2.00	0.00	-104.14	0.00	104.14	2,983.72	1,491.86	4,123.56	2,064.84	1.74	-0.22	0.037
80.00	-31.69	-1.99	0.00	-94.13	0.00	94.13	2,897.46	1,448.73	3,887.31	1,946.54	1.99	-0.24	0.035
81.62	-29.84	-1.93	0.00	-90.90	0.00	90.90	2,869.45	1,434.73	3,812.10	1,908.88	2.07	-0.24	0.034
85.00	-29.09	-1.91	0.00	-84.38	0.00	84.38	2,811.20	1,405.60	3,658.02	1,831.73	2.24	-0.25	0.032
86.37	-27.71	-1.87	0.00	-81.75	0.00	81.75	2,342.68	1,171.34	3,095.01	1,549.81	2.32	-0.26	0.035
90.00	-25.82	-1.80	0.00	-74.98	0.00	74.98	2,304.43	1,152.21	2,976.95	1,490.69	2.51	-0.27	0.033
95.00	-23.95	-1.73	0.00	-65.98	0.00	65.98	2,249.56	1,124.78	2,815.20	1,409.69	2.80	-0.28	0.030
100.00	-21.88	-1.64	0.00	-57.34	0.00	57.34	2,177.68	1,088.84	2,637.27	1,320.60	3.10	-0.29	0.027
105.00	-21.84	-1.64	0.00	-49.16	0.00	49.16	2,105.79	1,052.90	2,465.16	1,234.41	3.41	-0.30	0.025
105.13	-20.46	-1.57	0.00	-48.95	0.00	48.95	2,103.99	1,052.00	2,460.93	1,232.29	3.42	-0.30	0.025
105.13	-20.46	-1.57	0.00	-48.95	0.00	48.95	2,103.99	1,052.00	2,460.93	1,232.29	3.42	-0.30	0.049
110.00	-19.22	-1.51	0.00	-41.30	0.00	41.30	2,033.91	1,016.95	2,298.85	1,151.13	3.73	-0.31	0.045
115.00	-18.28	-1.46	0.00	-33.76	0.00	33.76	1,962.02	981.01	2,138.35	1,070.76	4.07	-0.33	0.041
120.00	-14.51	-1.22	0.00	-26.48	0.00	26.48	1,890.14	945.07	1,983.66	993.30	4.43	-0.35	0.034
125.00	-14.48	-1.22	0.00	-20.36	0.00	20.36	1,818.26	909.13	1,834.77	918.75	4.81	-0.37	0.030
125.12	-13.52	-1.16	0.00	-20.21	0.00	20.21	1,816.48	908.24	1,831.17	916.95	4.81	-0.37	0.029
128.87	-13.35	-1.15	0.00	-15.86	0.00	15.86	1,443.09	721.55	1,448.31	725.23	5.11	-0.38	0.031
130.00	-13.04	-1.13	0.00	-14.57	0.00	14.57	1,430.26	715.13	1,422.41	712.26	5.20	-0.38	0.030
132.00	-10.48	-0.94	0.00	-12.31	0.00	12.31	1,407.26	703.63	1,376.79	689.42	5.36	-0.39	0.025
135.00	-9.81	-0.88	0.00	-9.51	0.00	9.51	1,372.75	686.38	1,309.76	655.86	5.60	-0.39	0.022
140.00	-9.41	-0.85	0.00	-5.09	0.00	5.09	1,315.24	657.62	1,201.77	601.78	6.02	-0.40	0.016
143.00	-5.69	-0.53	0.00	-2.54	0.00	2.54	1,280.74	640.37	1,139.20	570.45	6.27	-0.40	0.009
145.00	-5.35	-0.50	0.00	-1.49	0.00	1.49	1,257.74	628.87	1,098.42	550.03	6.44	-0.40	0.007
148.00	0.00	-0.46	0.00	0.00	0.00	0.00	1,223.23	611.62	1,038.64	520.09	6.70	-0.41	0.000

Site Number: 302515 | Code: ANSI/TIA-222-G |

Site Name: SMFR - North, CT | Engineering Number:OAA720650_C3_02 | 2/21/2018 12:44:59 PM

Customer: AT&T MOBILITY

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.23	-2.18	0.00	-263.59	0.00	263.59	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.048
5.00	-44.74	-2.19	0.00	-252.68	0.00	252.68	4,702.37	2,351.19	8,987.95	4,500.65	0.01	-0.01	0.047
10.00	-43.01	-2.20	0.00	-241.72	0.00	241.72	4,630.27	2,315.13	8,663.09	4,337.98	0.03	-0.03	0.047
15.00	-41.29	-2.21	0.00	-230.71	0.00	230.71	4,557.03	2,278.52	8,341.98	4,177.19	0.07	-0.04	0.046
20.00	-39.59	-2.21	0.00	-219.67	0.00	219.67	4,482.67	2,241.34	8,024.78	4,018.36	0.12	-0.06	0.045
25.00	-37.91	-2.21	0.00	-208.62	0.00	208.62	4,403.56	2,201.78	7,705.28	3,858.37	0.19	-0.07	0.044
30.00	-36.25	-2.21	0.00	-197.56	0.00	197.56	4,302.92	2,151.46	7,355.37	3,683.15	0.27	-0.09	0.043
35.00	-34.61	-2.20	0.00	-186.52	0.00	186.52	4,202.28	2,101.14	7,013.59	3,512.01	0.37	-0.10	0.042
40.00	-34.23	-2.20	0.00	-175.51	0.00	175.51	4,101.65	2,050.82	6,679.95	3,344.94	0.48	-0.12	0.041
41.16	-32.46	-2.18	0.00	-172.95	0.00	172.95	4,078.23	2,039.12	6,603.48	3,306.65	0.51	-0.12	0.041
45.00	-31.63	-2.18	0.00	-164.57	0.00	164.57	4,001.01	2,000.51	6,354.43	3,181.94	0.61	-0.13	0.040
46.83	-30.67	-2.17	0.00	-160.59	0.00	160.59	3,410.94	1,705.47	5,490.25	2,749.21	0.66	-0.14	0.043
50.00	-29.19	-2.14	0.00	-153.73	0.00	153.73	3,371.32	1,685.66	5,340.15	2,674.05	0.75	-0.14	0.042
55.00	-27.71	-2.12	0.00	-143.01	0.00	143.01	3,307.92	1,653.96	5,106.10	2,556.85	0.91	-0.16	0.040
60.00	-26.26	-2.09	0.00	-132.41	0.00	132.41	3,242.50	1,621.25	4,874.14	2,440.69	1.09	-0.18	0.039
65.00	-24.82	-2.05	0.00	-121.96	0.00	121.96	3,156.24	1,578.12	4,616.98	2,311.92	1.28	-0.19	0.037
70.00	-23.40	-2.01	0.00	-111.70	0.00	111.70	3,069.98	1,534.99	4,366.78	2,186.64	1.49	-0.20	0.035
75.00	-21.87	-1.96	0.00	-101.64	0.00	101.64	2,983.72	1,491.86	4,123.56	2,064.84	1.71	-0.22	0.034
80.00	-21.41	-1.94	0.00	-91.85	0.00	91.85	2,897.46	1,448.73	3,887.31	1,946.54	1.95	-0.23	0.032
81.62	-20.16	-1.89	0.00	-88.70	0.00	88.70	2,869.45	1,434.73	3,812.10	1,908.88	2.03	-0.24	0.031
85.00	-19.66	-1.87	0.00	-82.32	0.00	82.32	2,811.20	1,405.60	3,658.02	1,831.73	2.20	-0.25	0.030
86.37	-18.72	-1.82	0.00	-79.76	0.00	79.76	2,342.68	1,171.34	3,095.01	1,549.81	2.27	-0.25	0.032
90.00	-17.45	-1.76	0.00	-73.14	0.00	73.14	2,304.43	1,152.21	2,976.95	1,490.69	2.46	-0.26	0.030
95.00	-16.18	-1.69	0.00	-64.35	0.00	64.35	2,249.56	1,124.78	2,815.20	1,409.69	2.74	-0.27	0.027
100.00	-14.79	-1.60	0.00	-55.91	0.00	55.91	2,177.68	1,088.84	2,637.27	1,320.60	3.03	-0.28	0.025
105.00	-14.75	-1.60	0.00	-47.92	0.00	47.92	2,105.79	1,052.90	2,465.16	1,234.41	3.34	-0.30	0.023
105.13	-13.83	-1.53	0.00	-47.72	0.00	47.72	2,103.99	1,052.00	2,460.93	1,232.29	3.34	-0.30	0.023
105.13	-13.83	-1.53	0.00	-47.72	0.00	47.72	2,103.99	1,052.00	2,460.93	1,232.29	3.34	-0.30	0.045
110.00	-12.99	-1.47	0.00	-40.25	0.00	40.25	2,033.91	1,016.95	2,298.85	1,151.13	3.65	-0.31	0.041
115.00	-12.35	-1.42	0.00	-32.90	0.00	32.90	1,962.02	981.01	2,138.35	1,070.76	3.98	-0.33	0.037
120.00	-9.80	-1.19	0.00	-25.80	0.00	25.80	1,890.14	945.07	1,983.66	993.30	4.33	-0.34	0.031
125.00	-9.79	-1.19	0.00	-19.83	0.00	19.83	1,818.26	909.13	1,834.77	918.75	4.70	-0.36	0.027
125.12	-9.13	-1.13	0.00	-19.68	0.00	19.68	1,816.48	908.24	1,831.17	916.95	4.71	-0.36	0.026
128.87	-9.02	-1.12	0.00	-15.45	0.00	15.45	1,443.09	721.55	1,448.31	725.23	5.00	-0.37	0.028
130.00	-8.81	-1.10	0.00	-14.19	0.00	14.19	1,430.26	715.13	1,422.41	712.26	5.08	-0.37	0.026
132.00	-7.08	-0.91	0.00	-11.99	0.00	11.99	1,407.26	703.63	1,376.79	689.42	5.24	-0.38	0.022
135.00	-6.63	-0.86	0.00	-9.26	0.00	9.26	1,372.75	686.38	1,309.76	655.86	5.48	-0.38	0.019
140.00	-6.36	-0.83	0.00	-4.96	0.00	4.96	1,315.24	657.62	1,201.77	601.78	5.89	-0.39	0.013
143.00	-3.85	-0.51	0.00	-2.48	0.00	2.48	1,280.74	640.37	1,139.20	570.45	6.13	-0.39	0.007
145.00	-3.62	-0.48	0.00	-1.45	0.00	1.45	1,257.74	628.87	1,098.42	550.03	6.30	-0.40	0.006
148.00	0.00	-0.46	0.00	0.00	0.00	0.00	1,223.23	611.62	1,038.64	520.09	6.55	-0.40	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.25
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.27
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	2.50
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	146.50	271	1.852	1.785	1.069	0.466	109	340
38	144.00	183	1.789	1.490	0.959	0.412	65	230
37	141.50	316	1.728	1.230	0.858	0.361	99	396
36	137.50	538	1.631	0.879	0.713	0.285	133	674
35	133.50	329	1.538	0.599	0.589	0.217	62	412
34	131.00	243	1.481	0.455	0.520	0.178	37	305
33	129.44	138	1.446	0.376	0.480	0.155	19	173
32	127.00	771	1.392	0.268	0.423	0.121	81	966
31	125.06	17	1.350	0.195	0.382	0.096	1	22
30	122.50	708	1.295	0.113	0.332	0.066	41	887
29	117.50	756	1.191	-0.003	0.248	0.015	10	947
28	112.50	989	1.092	-0.074	0.182	-0.026	-22	1,240
27	107.56	1,094	0.998	-0.110	0.131	-0.055	-52	1,372
26	105.06	37	0.952	-0.119	0.109	-0.066	-2	46
25	102.50	1,473	0.907	-0.122	0.090	-0.075	-96	1,846
24	97.50	1,491	0.820	-0.115	0.060	-0.083	-108	1,869
23	92.50	1,508	0.738	-0.098	0.038	-0.080	-105	1,889
22	88.19	1,104	0.671	-0.078	0.025	-0.069	-66	1,383
21	85.69	596	0.634	-0.065	0.019	-0.058	-30	747
20	83.31	1,478	0.599	-0.053	0.014	-0.047	-60	1,852
19	80.81	534	0.563	-0.040	0.011	-0.032	-15	669
18	77.50	1,658	0.518	-0.023	0.008	-0.012	-17	2,077
17	72.50	1,678	0.454	0.000	0.006	0.019	27	2,103
16	67.50	1,698	0.393	0.020	0.007	0.045	66	2,128
15	62.50	1,718	0.337	0.036	0.009	0.063	94	2,153
14	57.50	1,738	0.285	0.048	0.014	0.074	111	2,177
13	52.50	1,757	0.238	0.057	0.018	0.079	120	2,202
12	48.42	1,124	0.202	0.062	0.023	0.080	78	1,409
11	45.92	987	0.182	0.065	0.026	0.080	69	1,236
10	43.08	2,087	0.160	0.067	0.029	0.080	145	2,615
9	40.58	447	0.142	0.069	0.031	0.079	31	560
8	37.50	1,936	0.121	0.070	0.034	0.078	131	2,426
7	32.50	1,959	0.091	0.071	0.038	0.076	130	2,455
6	27.50	1,982	0.065	0.072	0.041	0.074	128	2,484

5	22.50	2,005	0.044	0.071	0.042	0.072	126	2,513
4	17.50	2,028	0.026	0.067	0.040	0.069	122	2,542
3	12.50	2,051	0.013	0.059	0.035	0.063	113	2,570
2	7.50	1,757	0.005	0.044	0.025	0.051	78	2,202
1	2.50	1,780	0.001	0.018	0.010	0.025	39	2,231
Commscope ATSBT-	160.00	5	2.209	4.120	1.851	0.810	4	7
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.810	31	55
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.810	27	49
Andrew SBNHH-1D65B	160.00	152	2.209	4.120	1.851	0.810	107	191
Kaelus DBC0061F1V51-	148.00	153	1.890	1.980	1.140	0.500	66	192
Powerwave Allgon LGP	148.00	85	1.890	1.980	1.140	0.500	37	106
Raycap DC6-48-60-18-	148.00	20	1.890	1.980	1.140	0.500	9	25
Raycap DC6-48-60-18-	148.00	20	1.890	1.980	1.140	0.500	9	25
Raycap DC6-48-60-0-8	148.00	33	1.890	1.980	1.140	0.500	14	41
Ericsson RRUS 4478 B	148.00	180	1.890	1.980	1.140	0.500	78	225
Ericsson RRUS 11 (Ba	148.00	165	1.890	1.980	1.140	0.500	71	207
Ericsson RRUS 32	148.00	152	1.890	1.980	1.140	0.500	66	191
Ericsson RRUS 32 B2	148.00	159	1.890	1.980	1.140	0.500	69	199
Ericsson RRUS 32 B66	148.00	159	1.890	1.980	1.140	0.500	69	199
Powerwave Allgon 777	148.00	105	1.890	1.980	1.140	0.500	45	132
Pipe Mount	148.00	200	1.890	1.980	1.140	0.500	87	251
Quintel QS66512-2	148.00	333	1.890	1.980	1.140	0.500	144	417
CCI OPA-65R-LCUU-H6	148.00	219	1.890	1.980	1.140	0.500	95	274
Kathrein 80010965	148.00	293	1.890	1.980	1.140	0.500	127	367
Flat Platform w/ Han	148.00	2,000	1.890	1.980	1.140	0.500	866	2,506
RFS FD9R6004	143.00	19	1.764	1.382	0.917	0.391	6	23
Alcatel-Lucent RRH2X	143.00	172	1.764	1.382	0.917	0.391	58	216
Alcatel-Lucent RRH2x	143.00	227	1.764	1.382	0.917	0.391	77	284
Alcatel-Lucent RRH4x	143.00	253	1.764	1.382	0.917	0.391	86	317
RFS DB-T1-6Z-8AB-0Z	143.00	88	1.764	1.382	0.917	0.391	30	110
Antel BXA-80063-6BF-	143.00	19	1.764	1.382	0.917	0.391	7	24
Antel BXA-70063/6CF	143.00	34	1.764	1.382	0.917	0.391	12	43
Antel BXA-80080/6CF	143.00	22	1.764	1.382	0.917	0.391	7	28
Commscope SBNHH-	143.00	203	1.764	1.382	0.917	0.391	69	254
Commscope SBNHH-	143.00	247	1.764	1.382	0.917	0.391	84	309
Flat Low Profile Pla	143.00	1,500	1.764	1.382	0.917	0.391	508	1,880
KMW KMDAPS2040000	132.00	48	1.503	0.510	0.547	0.193	8	60
KMW AM-X-WM-17-65-	132.00	43	1.503	0.510	0.547	0.193	7	53
Decibel DB844H90E-XY	132.00	126	1.503	0.510	0.547	0.193	21	158
Flat Low Profile Pla	132.00	1,500	1.503	0.510	0.547	0.193	251	1,880
Box Enclosures BEN-9	120.00	4	1.243	0.049	0.288	0.039	0	6
Nokia FWHR	120.00	79	1.243	0.049	0.288	0.039	3	100
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.039	7	241
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.039	9	342
Commscope	120.00	83	1.243	0.049	0.288	0.039	3	104
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.039	6	214
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.039	51	1,880
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.080	-2	33
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.080	-10	188
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.004	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.004	0	188
		56,611	103.837	72.865	47.783	19.305	5,008	70,940

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	146.50	271	1.852	1.785	1.069	0.466	109	230
38	144.00	183	1.789	1.490	0.959	0.412	65	155

37	141.50	316	1.728	1.230	0.858	0.361	99	268
36	137.50	538	1.631	0.879	0.713	0.285	133	455
35	133.50	329	1.538	0.599	0.589	0.217	62	279
34	131.00	243	1.481	0.455	0.520	0.178	37	206
33	129.44	138	1.446	0.376	0.480	0.155	19	117
32	127.00	771	1.392	0.268	0.423	0.121	81	653
31	125.06	17	1.350	0.195	0.382	0.096	1	15
30	122.50	708	1.295	0.113	0.332	0.066	41	599
29	117.50	756	1.191	-0.003	0.248	0.015	10	640
28	112.50	989	1.092	-0.074	0.182	-0.026	-22	838
27	107.56	1,094	0.998	-0.110	0.131	-0.055	-52	927
26	105.06	37	0.952	-0.119	0.109	-0.066	-2	31
25	102.50	1,473	0.907	-0.122	0.090	-0.075	-96	1,248
24	97.50	1,491	0.820	-0.115	0.060	-0.083	-108	1,263
23	92.50	1,508	0.738	-0.098	0.038	-0.080	-105	1,277
22	88.19	1,104	0.671	-0.078	0.025	-0.069	-66	935
21	85.69	596	0.634	-0.065	0.019	-0.058	-30	505
20	83.31	1,478	0.599	-0.053	0.014	-0.047	-60	1,252
19	80.81	534	0.563	-0.040	0.011	-0.032	-15	452
18	77.50	1,658	0.518	-0.023	0.008	-0.012	-17	1,404
17	72.50	1,678	0.454	0.000	0.006	0.019	27	1,421
16	67.50	1,698	0.393	0.020	0.007	0.045	66	1,438
15	62.50	1,718	0.337	0.036	0.009	0.063	94	1,455
14	57.50	1,738	0.285	0.048	0.014	0.074	111	1,472
13	52.50	1,757	0.238	0.057	0.018	0.079	120	1,488
12	48.42	1,124	0.202	0.062	0.023	0.080	78	952
11	45.92	987	0.182	0.065	0.026	0.080	69	835
10	43.08	2,087	0.160	0.067	0.029	0.080	145	1,767
9	40.58	447	0.142	0.069	0.031	0.079	31	379
8	37.50	1,936	0.121	0.070	0.034	0.078	131	1,640
7	32.50	1,959	0.091	0.071	0.038	0.076	130	1,659
6	27.50	1,982	0.065	0.072	0.041	0.074	128	1,679
5	22.50	2,005	0.044	0.071	0.042	0.072	126	1,698
4	17.50	2,028	0.026	0.067	0.040	0.069	122	1,718
3	12.50	2,051	0.013	0.059	0.035	0.063	113	1,737
2	7.50	1,757	0.005	0.044	0.025	0.051	78	1,488
1	2.50	1,780	0.001	0.018	0.010	0.025	39	1,508
Commscope ATSBT-	160.00	5	2.209	4.120	1.851	0.810	4	5
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.810	31	37
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.810	27	33
Andrew SBNHH-1D65B	160.00	152	2.209	4.120	1.851	0.810	107	129
Kaelus DBC0061F1V51-	148.00	153	1.890	1.980	1.140	0.500	66	130
Powerwave Allgon LGP	148.00	85	1.890	1.980	1.140	0.500	37	72
Raycap DC6-48-60-18-	148.00	20	1.890	1.980	1.140	0.500	9	17
Raycap DC6-48-60-18-	148.00	20	1.890	1.980	1.140	0.500	9	17
Raycap DC6-48-60-0-8	148.00	33	1.890	1.980	1.140	0.500	14	28
Ericsson RRUS 4478 B	148.00	180	1.890	1.980	1.140	0.500	78	152
Ericsson RRUS 11 (Ba	148.00	165	1.890	1.980	1.140	0.500	71	140
Ericsson RRUS 32	148.00	152	1.890	1.980	1.140	0.500	66	129
Ericsson RRUS 32 B2	148.00	159	1.890	1.980	1.140	0.500	69	135
Ericsson RRUS 32 B66	148.00	159	1.890	1.980	1.140	0.500	69	135
Powerwave Allgon 777	148.00	105	1.890	1.980	1.140	0.500	45	89
Pipe Mount	148.00	200	1.890	1.980	1.140	0.500	87	169
Quintel QS66512-2	148.00	333	1.890	1.980	1.140	0.500	144	282
CCI OPA-65R-LCUU-H6	148.00	219	1.890	1.980	1.140	0.500	95	185
Kathrein 80010965	148.00	293	1.890	1.980	1.140	0.500	127	248
Flat Platform w/ Han	148.00	2,000	1.890	1.980	1.140	0.500	866	1,694
RFS FD9R6004	143.00	19	1.764	1.382	0.917	0.391	6	16
Alcatel-Lucent RRH2X	143.00	172	1.764	1.382	0.917	0.391	58	146
Alcatel-Lucent RRH2x	143.00	227	1.764	1.382	0.917	0.391	77	192
Alcatel-Lucent RRH4x	143.00	253	1.764	1.382	0.917	0.391	86	214
RFS DB-T1-6Z-8AB-0Z	143.00	88	1.764	1.382	0.917	0.391	30	75
Antel BXA-80063-6BF-	143.00	19	1.764	1.382	0.917	0.391	7	16
Antel BXA-70063/6CF	143.00	34	1.764	1.382	0.917	0.391	12	29

Antel BXA-80080/6CF	143.00	22	1.764	1.382	0.917	0.391	7	19
Commscope SBNHH-	143.00	203	1.764	1.382	0.917	0.391	69	172
Commscope SBNHH-	143.00	247	1.764	1.382	0.917	0.391	84	209
Flat Low Profile Pla	143.00	1,500	1.764	1.382	0.917	0.391	508	1,270
KMW KMDAPS2040000	132.00	48	1.503	0.510	0.547	0.193	8	40
KMW AM-X-WM-17-65-	132.00	43	1.503	0.510	0.547	0.193	7	36
Decibel DB844H90E-XY	132.00	126	1.503	0.510	0.547	0.193	21	107
Flat Low Profile Pla	132.00	1,500	1.503	0.510	0.547	0.193	251	1,270
Box Enclosures BEN-9	120.00	4	1.243	0.049	0.288	0.039	0	4
Nokia FWHR	120.00	79	1.243	0.049	0.288	0.039	3	67
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.039	7	163
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.039	9	231
Commscope	120.00	83	1.243	0.049	0.288	0.039	3	70
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.039	6	145
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.039	51	1,270
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.080	-2	22
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.080	-10	127
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.004	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.004	0	127
		56,611	103.837	72.865	47.783	19.305	5,008	47,943

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-68.41	-4.82	0.00	-578.17	0.00	578.17	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.100
5.00	-66.20	-4.77	0.00	-554.08	0.00	554.08	4,702.37	2,351.19	8,987.95	4,500.65	0.02	-0.03	0.099
10.00	-63.63	-4.69	0.00	-530.21	0.00	530.21	4,630.27	2,315.13	8,663.09	4,337.98	0.07	-0.06	0.097
15.00	-61.09	-4.60	0.00	-506.73	0.00	506.73	4,557.03	2,278.52	8,341.98	4,177.19	0.15	-0.09	0.095
20.00	-58.57	-4.51	0.00	-483.72	0.00	483.72	4,482.67	2,241.34	8,024.78	4,018.36	0.26	-0.12	0.094
25.00	-56.09	-4.40	0.00	-461.19	0.00	461.19	4,403.56	2,201.78	7,705.28	3,858.37	0.41	-0.16	0.092
30.00	-53.63	-4.30	0.00	-439.18	0.00	439.18	4,302.92	2,151.46	7,355.37	3,683.15	0.59	-0.19	0.091
35.00	-51.20	-4.19	0.00	-417.70	0.00	417.70	4,202.28	2,101.14	7,013.59	3,512.01	0.81	-0.22	0.089
40.00	-50.64	-4.17	0.00	-396.77	0.00	396.77	4,101.65	2,050.82	6,679.95	3,344.94	1.06	-0.25	0.088
41.16	-48.02	-4.03	0.00	-391.92	0.00	391.92	4,078.23	2,039.12	6,603.48	3,306.65	1.12	-0.26	0.088
45.00	-46.79	-3.97	0.00	-376.46	0.00	376.46	4,001.01	2,000.51	6,354.43	3,181.94	1.34	-0.29	0.086
46.83	-45.38	-3.90	0.00	-369.20	0.00	369.20	3,410.94	1,705.47	5,490.25	2,749.21	1.45	-0.30	0.094
50.00	-43.17	-3.79	0.00	-356.84	0.00	356.84	3,371.32	1,685.66	5,340.15	2,674.05	1.66	-0.32	0.093
55.00	-40.99	-3.69	0.00	-337.91	0.00	337.91	3,307.92	1,653.96	5,106.10	2,556.85	2.02	-0.36	0.090
60.00	-38.84	-3.60	0.00	-319.47	0.00	319.47	3,242.50	1,621.25	4,874.14	2,440.69	2.41	-0.39	0.088
65.00	-36.71	-3.55	0.00	-301.45	0.00	301.45	3,156.24	1,578.12	4,616.98	2,311.92	2.84	-0.43	0.086
70.00	-34.61	-3.53	0.00	-283.71	0.00	283.71	3,069.98	1,534.99	4,366.78	2,186.64	3.31	-0.47	0.084
75.00	-32.34	-3.54	0.00	-266.08	0.00	266.08	2,983.72	1,491.86	4,123.56	2,064.84	3.82	-0.50	0.082
80.00	-31.67	-3.57	0.00	-248.36	0.00	248.36	2,897.46	1,448.73	3,887.31	1,946.54	4.37	-0.54	0.080
81.62	-29.81	-3.62	0.00	-242.57	0.00	242.57	2,869.45	1,434.73	3,812.10	1,908.88	4.56	-0.55	0.079
85.00	-29.06	-3.65	0.00	-230.36	0.00	230.36	2,811.20	1,405.60	3,658.02	1,831.73	4.96	-0.58	0.077
86.37	-27.68	-3.71	0.00	-225.34	0.00	225.34	2,342.68	1,171.34	3,095.01	1,549.81	5.13	-0.59	0.083
90.00	-25.79	-3.81	0.00	-211.89	0.00	211.89	2,304.43	1,152.21	2,976.95	1,490.69	5.58	-0.61	0.080
95.00	-23.91	-3.91	0.00	-192.84	0.00	192.84	2,249.56	1,124.78	2,815.20	1,409.69	6.25	-0.65	0.075
100.00	-21.84	-4.01	0.00	-173.27	0.00	173.27	2,177.68	1,088.84	2,637.27	1,320.60	6.95	-0.69	0.071
105.00	-21.80	-4.02	0.00	-153.22	0.00	153.22	2,105.79	1,052.90	2,465.16	1,234.41	7.69	-0.73	0.066
105.13	-20.42	-4.06	0.00	-152.72	0.00	152.72	2,103.99	1,052.00	2,460.93	1,232.29	7.71	-0.73	0.065
105.13	-20.42	-4.06	0.00	-152.72	0.00	152.72	2,103.99	1,052.00	2,460.93	1,232.29	7.71	-0.73	0.134
110.00	-19.18	-4.08	0.00	-132.93	0.00	132.93	2,033.91	1,016.95	2,298.85	1,151.13	8.47	-0.76	0.125
115.00	-18.23	-4.08	0.00	-112.52	0.00	112.52	1,962.02	981.01	2,138.35	1,070.76	9.30	-0.82	0.114
120.00	-14.45	-3.92	0.00	-92.12	0.00	92.12	1,890.14	945.07	1,983.66	993.30	10.20	-0.89	0.100
125.00	-14.43	-3.92	0.00	-72.53	0.00	72.53	1,818.26	909.13	1,834.77	918.75	11.16	-0.94	0.087
125.12	-13.46	-3.83	0.00	-72.04	0.00	72.04	1,816.48	908.24	1,831.17	916.95	11.18	-0.94	0.086
128.87	-13.29	-3.82	0.00	-57.67	0.00	57.67	1,443.09	721.55	1,448.31	725.23	11.94	-0.98	0.089
130.00	-12.98	-3.78	0.00	-53.37	0.00	53.37	1,430.26	715.13	1,422.41	712.26	12.17	-0.99	0.084
132.00	-10.43	-3.39	0.00	-45.82	0.00	45.82	1,407.26	703.63	1,376.79	689.42	12.59	-1.01	0.074
135.00	-9.75	-3.25	0.00	-35.66	0.00	35.66	1,372.75	686.38	1,309.76	655.86	13.23	-1.04	0.061
140.00	-9.36	-3.14	0.00	-19.42	0.00	19.42	1,315.24	657.62	1,201.77	601.78	14.34	-1.07	0.039
143.00	-5.66	-2.07	0.00	-9.99	0.00	9.99	1,280.74	640.37	1,139.20	570.45	15.01	-1.08	0.022
145.00	-5.32	-1.95	0.00	-5.86	0.00	5.86	1,257.74	628.87	1,098.42	550.03	15.46	-1.08	0.015
148.00	0.00	-1.85	0.00	0.00	0.00	0.00	1,223.23	611.62	1,038.64	520.09	16.15	-1.08	0.000

Site Number: 302515 Code: ANSI/TIA-222-G

Site Name: SMFR - North, CT Engineering Number:OAA720650_C3_02 2/21/2018 12:44:59 PM

Customer: AT&T MOBILITY

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.23	-4.81	0.00	-567.27	0.00	567.27	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.095
5.00	-44.74	-4.76	0.00	-543.21	0.00	543.21	4,702.37	2,351.19	8,987.95	4,500.65	0.02	-0.03	0.093
10.00	-43.00	-4.67	0.00	-519.43	0.00	519.43	4,630.27	2,315.13	8,663.09	4,337.98	0.06	-0.06	0.092
15.00	-41.28	-4.56	0.00	-496.10	0.00	496.10	4,557.03	2,278.52	8,341.98	4,177.19	0.14	-0.09	0.090
20.00	-39.58	-4.46	0.00	-473.28	0.00	473.28	4,482.67	2,241.34	8,024.78	4,018.36	0.26	-0.12	0.089
25.00	-37.90	-4.35	0.00	-451.00	0.00	451.00	4,403.56	2,201.78	7,705.28	3,858.37	0.40	-0.15	0.087
30.00	-36.24	-4.23	0.00	-429.27	0.00	429.27	4,302.92	2,151.46	7,355.37	3,683.15	0.58	-0.19	0.086
35.00	-34.60	-4.11	0.00	-408.11	0.00	408.11	4,202.28	2,101.14	7,013.59	3,512.01	0.79	-0.22	0.085
40.00	-34.22	-4.09	0.00	-387.55	0.00	387.55	4,101.65	2,050.82	6,679.95	3,344.94	1.03	-0.25	0.084
41.16	-32.45	-3.95	0.00	-382.78	0.00	382.78	4,078.23	2,039.12	6,603.48	3,306.65	1.10	-0.26	0.083
45.00	-31.61	-3.89	0.00	-367.63	0.00	367.63	4,001.01	2,000.51	6,354.43	3,181.94	1.31	-0.28	0.081
46.83	-30.66	-3.81	0.00	-360.51	0.00	360.51	3,410.94	1,705.47	5,490.25	2,749.21	1.42	-0.29	0.089
50.00	-29.17	-3.70	0.00	-348.43	0.00	348.43	3,371.32	1,685.66	5,340.15	2,674.05	1.63	-0.32	0.088
55.00	-27.70	-3.60	0.00	-329.93	0.00	329.93	3,307.92	1,653.96	5,106.10	2,556.85	1.97	-0.35	0.086
60.00	-26.24	-3.51	0.00	-311.95	0.00	311.95	3,242.50	1,621.25	4,874.14	2,440.69	2.36	-0.39	0.084
65.00	-24.80	-3.45	0.00	-294.40	0.00	294.40	3,156.24	1,578.12	4,616.98	2,311.92	2.78	-0.42	0.082
70.00	-23.38	-3.43	0.00	-277.15	0.00	277.15	3,069.98	1,534.99	4,366.78	2,186.64	3.24	-0.46	0.080
75.00	-21.84	-3.44	0.00	-260.02	0.00	260.02	2,983.72	1,491.86	4,123.56	2,064.84	3.74	-0.49	0.078
80.00	-21.39	-3.46	0.00	-242.80	0.00	242.80	2,897.46	1,448.73	3,887.31	1,946.54	4.28	-0.53	0.076
81.62	-20.14	-3.52	0.00	-237.17	0.00	237.17	2,869.45	1,434.73	3,812.10	1,908.88	4.46	-0.54	0.075
85.00	-19.63	-3.55	0.00	-225.29	0.00	225.29	2,811.20	1,405.60	3,658.02	1,831.73	4.85	-0.57	0.073
86.37	-18.69	-3.61	0.00	-220.42	0.00	220.42	2,342.68	1,171.34	3,095.01	1,549.81	5.01	-0.58	0.079
90.00	-17.41	-3.71	0.00	-207.32	0.00	207.32	2,304.43	1,152.21	2,976.95	1,490.69	5.46	-0.60	0.076
95.00	-16.15	-3.82	0.00	-188.75	0.00	188.75	2,249.56	1,124.78	2,815.20	1,409.69	6.11	-0.64	0.072
100.00	-14.75	-3.92	0.00	-169.67	0.00	169.67	2,177.68	1,088.84	2,637.27	1,320.60	6.80	-0.67	0.067
105.00	-14.72	-3.92	0.00	-150.08	0.00	150.08	2,105.79	1,052.90	2,465.16	1,234.41	7.52	-0.71	0.063
105.13	-13.79	-3.97	0.00	-149.58	0.00	149.58	2,103.99	1,052.00	2,460.93	1,232.29	7.54	-0.71	0.062
105.13	-13.79	-3.97	0.00	-149.58	0.00	149.58	2,103.99	1,052.00	2,460.93	1,232.29	7.54	-0.71	0.128
110.00	-12.95	-3.99	0.00	-130.23	0.00	130.23	2,033.91	1,016.95	2,298.85	1,151.13	8.28	-0.74	0.120
115.00	-12.30	-3.99	0.00	-110.27	0.00	110.27	1,962.02	981.01	2,138.35	1,070.76	9.10	-0.81	0.109
120.00	-9.75	-3.84	0.00	-90.34	0.00	90.34	1,890.14	945.07	1,983.66	993.30	9.97	-0.87	0.096
125.00	-9.73	-3.84	0.00	-71.14	0.00	71.14	1,818.26	909.13	1,834.77	918.75	10.91	-0.92	0.083
125.12	-9.08	-3.76	0.00	-70.66	0.00	70.66	1,816.48	908.24	1,831.17	916.95	10.94	-0.92	0.082
128.87	-8.96	-3.74	0.00	-56.58	0.00	56.58	1,443.09	721.55	1,448.31	725.23	11.68	-0.96	0.084
130.00	-8.76	-3.70	0.00	-52.37	0.00	52.37	1,430.26	715.13	1,422.41	712.26	11.90	-0.97	0.080
132.00	-7.03	-3.32	0.00	-44.97	0.00	44.97	1,407.26	703.63	1,376.79	689.42	12.31	-0.99	0.070
135.00	-6.57	-3.19	0.00	-35.00	0.00	35.00	1,372.75	686.38	1,309.76	655.86	12.94	-1.01	0.058
140.00	-6.31	-3.08	0.00	-19.07	0.00	19.07	1,315.24	657.62	1,201.77	601.78	14.02	-1.04	0.037
143.00	-3.81	-2.03	0.00	-9.81	0.00	9.81	1,280.74	640.37	1,139.20	570.45	14.68	-1.05	0.020
145.00	-3.59	-1.92	0.00	-5.75	0.00	5.75	1,257.74	628.87	1,098.42	550.03	15.13	-1.06	0.013
148.00	0.00	-1.85	0.00	0.00	0.00	0.00	1,223.23	611.62	1,038.64	520.09	15.79	-1.06	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	25.10	0.00	67.90	0.00	0.00	2994.91	105.13	0.52
0.9D + 1.6W	23.69	0.00	50.92	0.00	0.00	2827.34	105.13	0.50
1.2D + 1.0Di + 1.0Wi	6.87	0.00	103.58	0.00	0.00	819.25	105.13	0.16
(1.2 + 0.2Sds) * DL + E ELFM	2.19	0.00	68.41	0.00	0.00	268.29	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	4.82	0.00	68.41	0.00	0.00	578.17	105.13	0.13
(0.9 - 0.2Sds) * DL + E ELFM	2.18	0.00	46.23	0.00	0.00	263.59	0.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	4.81	0.00	46.23	0.00	0.00	567.27	105.13	0.13
1.0D + 1.0W	6.17	0.00	56.61	0.00	0.00	739.63	105.13	0.14

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	105.	(4) SOL-#20 All Thre	265.8	8.0	16.8	108.5	12.0	10	24	0.0	12.0	0	0	188.2	330.5	0.569

Base Plate & Anchor Rod Analysis

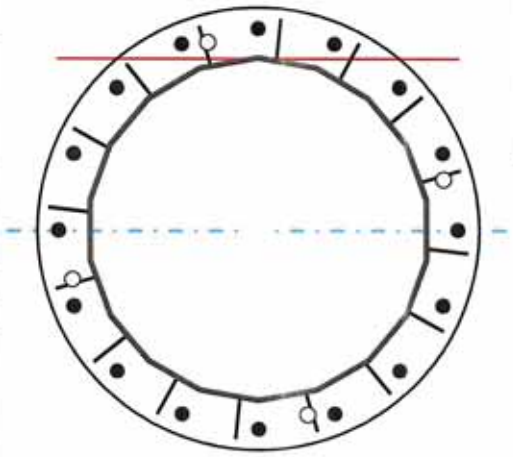
Pole Dimensions		
Number of Sides	18	-
Diameter	48.00	in
Thickness	0.438	in
Orientation Offset	10	°

Base Reactions		
Moment, Mu	2994.9	k-ft
Axial, Pu	67.9	k
Shear, Vu	25.1	k
Neutral Axis	0	°

Report Capacities		
Component	Capacity	Result
Base Plate	41%	Pass
Anchor Rods	49%	Pass
Dwyidag	47%	Pass

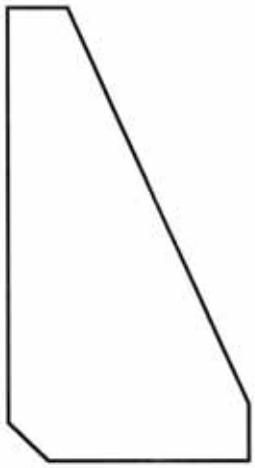
Base Plate		
Shape	Round	-
Diameter, ø	63	in
Thickness	2	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	1017.0	k
Bending Stress, ϕMn	2502.9	k

Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	54.88	in
Orientation Offset	15	°
Applied Force, Pu	186.1	k
Dywidag Bar, ϕPn	392.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	57	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	11.2	in
Orientation Offset	0	°
Applied Force, Pu	115.4	k
Anchor Rods, ϕPn	259.8	k

Stiffeners		
Arrangement	Radial	-
Quantity	16	-
Height	12	in
Width	6	in
Effective Width	6.000	in
Thickness	3/4	in
Effective Thickness	0.750	in
Notch	1	in
Flat Edge	1.5	in
Grade	A36	-
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	3/8	in
Bevel Depth		in
Vertical Weld	Fillet	
Vertical Fillet Size	3/8	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	5	°
Vertical Weld, ϕRn	198.2	k
Horz. Weld, ϕRn	106.4	k
Ten. Capacity, ϕTn	121.5	k
Comp. Capacity, ϕPn	766.0	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	25.1	2135.8	0.71
Anchor Rod Forces	25.1	2135.8	0.71
Additional Bolt (Grp1) Forces			
Additional Bolt (Grp2) Forces			
Dywidag Forces		859.1	0.29
Stiffener Forces	13.0	1107.0	0.37

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	65.0407	3.6134	0.2316		18395.99
Bolt	3.9761	3.2477	0.8393	4.5	21116.92
Bolt1					
Bolt2					
Dywidag	4.9087	4.9087	1.9175		7399.77
Stiffener	3.7500	3.3750	54.0000		19792.69

Base Plate		
Shape	Round	-
Diameter, D	63	in
Thickness, t	2	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	40.804	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

External Base Plate		
Chord Length AA	35.160	in
Additional AA	11.190	in
Section Modulus, Z	46.351	in^3
Applied Moment, Mu	1017.0	k-ft
Bending Capacity, ϕMn	2502.9	k-ft
Capacity, Mu/ϕMn	0.406	OK
Chord Length AB	34.126	in
Additional AB	10.305	in
Section Modulus, Z	44.432	in^3
Applied Moment, Mu	895.2	k-ft
Bending Capacity, ϕMn	2399.3	k-ft
Capacity, Mu/ϕMn	0.373	OK
Bend Line Length	35.251	in
Additional Bend Line	23.764	in
Section Modulus, Z	59.015	in^3
Applied Moment, Mu	1017.0	k-ft
Bending Capacity, ϕMn	3186.8	k-ft
Capacity, Mu/ϕMn	0.319	OK

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

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	57	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	115.4	k
Applied Shear, Vu	2.8	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.444	OK
Interaction Capacity	0.495	OK

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

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

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	54.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	186.1	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.474	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	62.4	k
Applied Horizontal Force, Vu	0.41	k

Vertical Weld		
Vert.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.063	-
Weld Coefficient, C	3.670	-
Compressive Capacity, ϕPn	198.2	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.063	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	158.8	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.317	OK

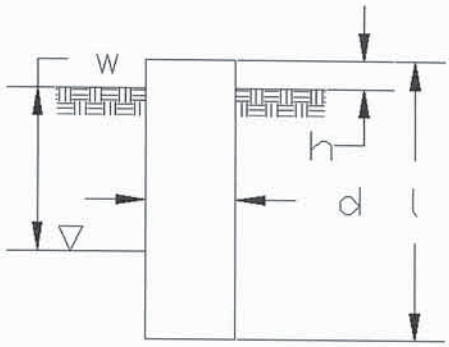
Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	3.940	-
Effective Fillet	0.375	in
Compressive Capacity, ϕPn	106.4	k
Horz.-to-Pole a=e_x/l	0.333	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	3.090	-
Shear Capacity, ϕVn	83.4	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.591	OK

Plate Tension		
Gross Cross Section	3.750	in^2
Net Cross Section	3.375	in^2
Tensile Capacity, ϕTn	121.5	k
Capacity, Tu/ϕTn	0.257	OK

Plate Compression		
Radius of Gyration	0.217	in^3
kl/r	33.26	-
4.71 √(E/Fy)	133.68	-
Buckling Stress(Fe)	258.8	-
Crit. Buckling Stress(Fcr)	227.0	ksi
Compressive Capacity, ϕPn	766.0	k
Capacity, Pu/ϕPn	0.041	OK

Site Name:	SMFR - North, CT
Site Number:	302515
Engineer:	Travis.Gatling
Engineering Number:	OAA720650
Date:	02/21/18

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



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

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	2994.9	k-ft
Shear/Leg (V):	25.1	k
Axial Load (P):	67.9	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	6.5	ft
Caisson Embedment (L-h):	24.0	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	22.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

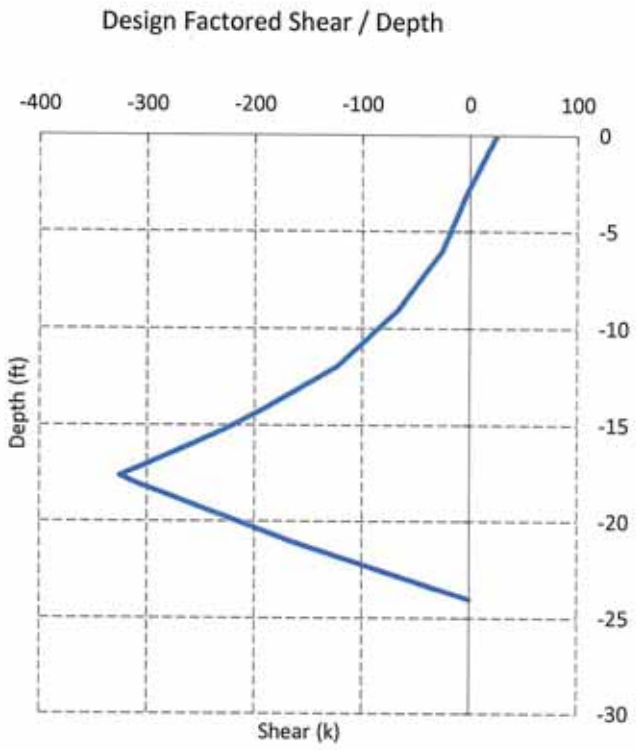
Soil Mechanical Properties

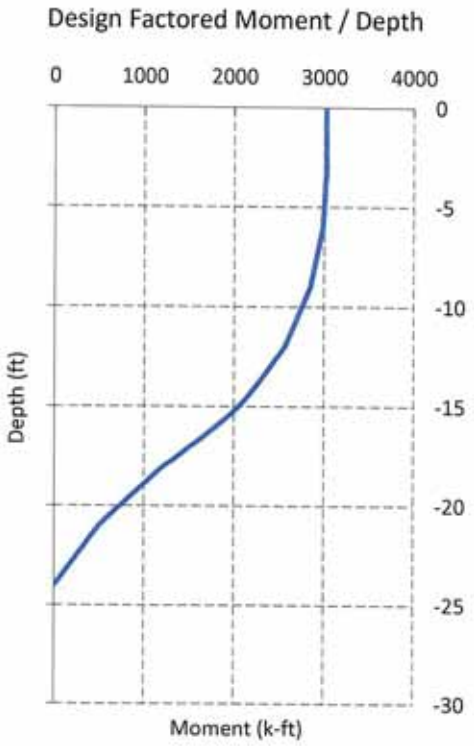
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	2.0	100	0	0	0	0
2.0	10.0	120	0	30	400	0
10.0	25.0	125	0	36	1400	40000

Required Embedment:	19.6	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	829.6 ft^3 =	30.7 yd^3
Weight of Concrete (Buoyancy Effect Considered):	120.3	k
Average Soil Unit Weight:	114.0	pcf
Skin Friction Resistance:	465.6	k
Compressive Bearing Resistance:	1327.3	k
Pullout Weight (Minus Concrete Weight):	936.9	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	439.4	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	1344.7	k
P_u:	97.4	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.07	Result: OK
Total Lateral Resistance:	2023.1	k
Inflection Point (Below Ground Surface):	17.6	ft
Design Overturning Moment At Inflection Point (M_D):	3462.1	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	6494.1	k-ft
$M_D/\phi_s M_n$:	0.53	Result: OK
ϕ_s:	0.75	

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	21	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	70.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	3028.5	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	4571.5	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.66	Result: OK
Design Shear (V_u):	325.1	k
Nominal Shear Capacity ($\phi_V V_n$):	456.5	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.71	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	1769.0	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	97.4	k
Nominal Compression Capacity ($\phi_P P_n$):	8390.2	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.007	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.66	Result: OK


Design Factored Shear / Depth
-400
-300
-200
-100
0
100
0
-5
-10
-15
-20
-25
-30
Depth (ft)
Shear (k)


Design Factored Moment / Depth
0
1000
2000
3000
4000
0
-5
-10
-15
-20
-25
-30
Depth (ft)
Moment (k-ft)

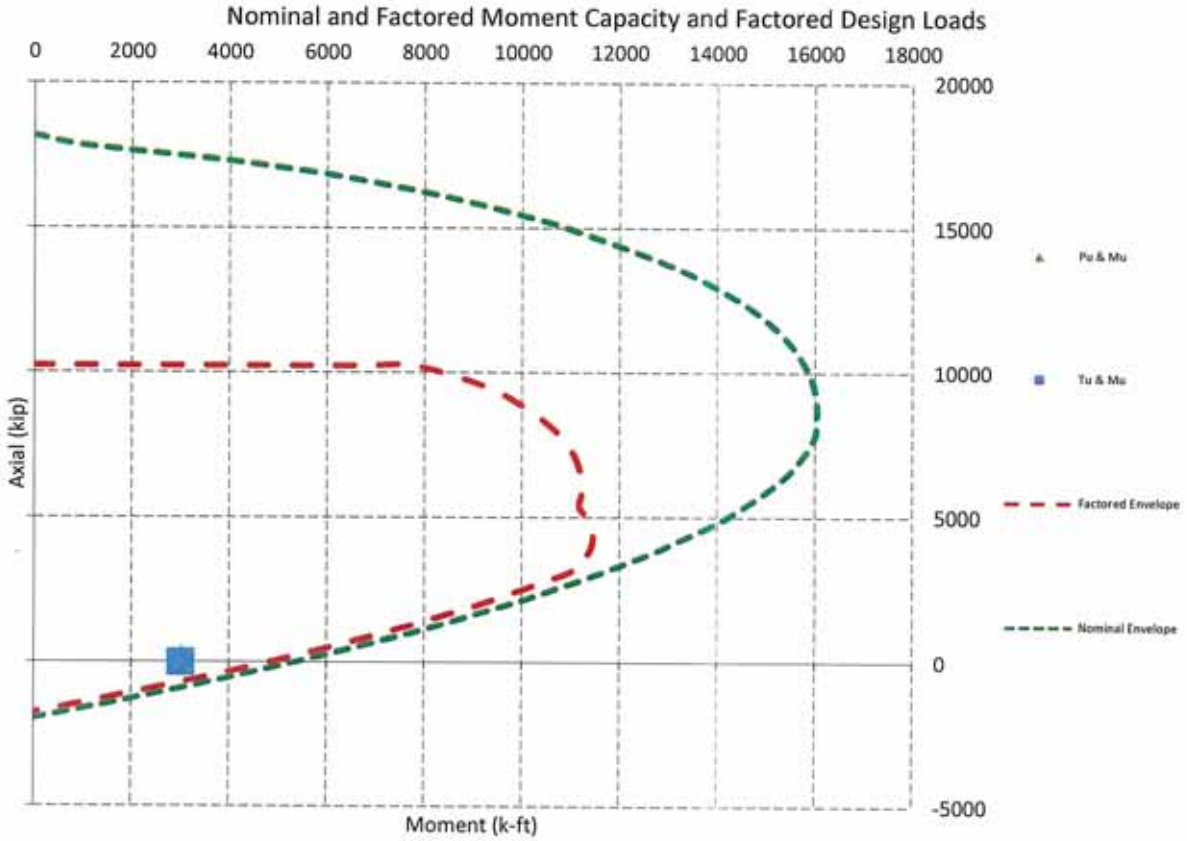

Nominal and Factored Moment Capacity and Factored Design Loads
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
15000
10000
5000
0
-5000
Axial (kip)
Moment (k-ft)
Pu & Mu
Tu & Mu
Factored Envelope
Nominal Envelope

Exhibit 2

AT&T at 1590 Newfield Avenue; Stamford, CT 06905

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2109
FA#: 10034979

Stamford North
1590 Newfield Avenue
Stamford, CT 06905

February 13, 2018

Centerline Communications Project Number: 950006-095

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**14.23 %**

February 13, 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: **CT2109 – Stamford North**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **1590 Newfield Avenue, Stamford, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **1590 Newfield Avenue, Stamford, 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)
UMTS	850 MHz	2	30
LTE	850 MHz	2	30
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz	4	30
LTE	700 MHz (Band 14)	4	60
LTE	1900 MHz (PCS)	4	60
LTE	2100 MHz (AWS)	4	60

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), 2100 MHz (AWS) 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	Powerwave 7770	152
A	2	CCI OPA-65R-LCUU-H6	152
A	3	Kathrein 800-10965	152
A	4	Quintel QS66512-2	152
B	1	Powerwave 7770	152
B	2	CCI OPA-65R-LCUU-H6	152
B	3	Kathrein 800-10965	152
B	4	Quintel QS66512-2	152
C	1	Powerwave 7770	152
C	2	CCI OPA-65R-LCUU-H6	152
C	3	Kathrein 800-10965	152
C	4	Quintel QS66512-2	152

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	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.25
Antenna A2	CCI OPA-65R-LCUU-H6	850 MHz / 2300 MHz (WCS) / 700 MHz	12.45 / 15.45 / 11.65	8	240	6,141.08	1.34
Antenna A3	Kathrein 800-10965	700 MHz (Band 14)	12.65	4	240	4,417.85	1.60
Antenna A4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	10.85 / 13.85 / 14.35	10	540	13,088.06	2.35
						Sector A Composite MPE%	**5.53**
Antenna B1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.25
Antenna B2	CCI OPA-65R-LCUU-H6	850 MHz / 2300 MHz (WCS) / 700 MHz	12.45 / 15.45 / 11.65	8	240	6,141.08	1.34
Antenna B3	Kathrein 800-10965	700 MHz (Band 14)	12.65	4	240	4,417.85	1.60
Antenna B4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	10.85 / 13.85 / 14.35	10	540	13,088.06	2.35
						Sector B Composite MPE%	**5.53**
Antenna C1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.25
Antenna C2	CCI OPA-65R-LCUU-H6	850 MHz / 2300 MHz (WCS) / 700 MHz	12.45 / 15.45 / 11.65	8	240	6,141.08	1.34
Antenna C3	Kathrein 800-10965	700 MHz (Band 14)	12.65	4	240	4,417.85	1.60
Antenna C4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	10.85 / 13.85 / 14.35	10	540	13,088.06	2.35
						Sector C Composite MPE%	**5.53**

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	**5.53 %**
Sprint	4.61 %
Sensus (CL&P)	0.12 %
Clearwire	0.11 %
Nextel iDEN	0.76 %
Verizon Wireless	2.08 %
T-Mobile	1.02 %
Site Total MPE %:	**14.23 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	5.53 %
AT&T Sector B Total:	5.53 %
AT&T Sector C Total:	5.53 %
Site Total:	14.23 %

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 (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	414.12	152	1.40	850 MHz	567	0.25%
AT&T 850 MHz LTE – Antenna 2	2	527.38	152	1.78	850 MHz	567	0.31%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	1,052.26	152	7.10	2300 MHz (WCS)	1000	0.71%
AT&T 700 MHz LTE – Antenna 2	2	438.65	152	1.48	700 MHz	467	0.32%
AT&T 700 MHz LTE – Antenna 3	4	1,104.46	152	7.45	700 MHz	467	1.60%
AT&T 700 MHz LTE – Antenna 4	2	364.86	152	1.23	700 MHz	467	0.26%
AT&T 1900 MHz (PCS) LTE – Antenna 4	4	1,455.97	152	9.82	1900 MHz (PCS)	1000	0.98%
AT&T 2100 MHz (AWS) LTE – Antenna 4	4	1,633.62	152	11.02	2100 MHz (AWS)	1000	1.10%
						Total:	**5.53%**

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:	5.53 %
Sector B:	5.53 %
Sector C:	5.53 %
AT&T Maximum Total (per sector):	5.53 %
Site Total:	14.23 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **14.23 %** 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.

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

Exhibit 3

AT&T at 1590 Newfield Avenue; Stamford, CT 06905

WIRELESS COMMUNICATIONS FACILITY
CT2109 - LTE 4C/5C/6C/7C FIRSTNET
STAMFORD NORTH
1590 NEWFIELD AVENUE
STAMFORD, CT 06905

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO "EXTRA" WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT
TO: 1509 NEWFIELD AVENUE, STAMFORD, CONNECTICUT

1.	TURN LEFT ONTO CAPITAL BLVD.	0.36 MI
2.	TURN LEFT ONTO WEST ST.	0.27 MI
3.	TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN.	0.30 MI
4.	MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST.	9.59 MI
5.	TAKE THE CT-106/OLD STAMFORD RD EXIT, EXIT 36.	51.60 MI
6.	TURN LEFT ONTO OLD STAMFORD RD/CT-106.	0.11 MI
7.	TAKE THE 1ST LEFT ONTO JELLIFF MILL RD.	0.07 MI
8.	TURN LEFT ONTO PONUS RDG.	1.01 MI
9.	PONUS RDG BECOMES HOPE ST.	0.36 MI
10.	TURN RIGHT ONTO EDEN RD.	0.17 MI
11.	TURN RIGHT TO STAY ON EDEN RD.	0.44 MI
12.	TURN LEFT ONTO NEWFIELD AVE.	0.67 MI
13.	1590 NEWFIELD AVE, STAMFORD, CT 06905-1507, 1590 NEWFIELD AVE IS ON THE RIGHT.	0.07 MI

VICINITY MAP

SCALE: 1" = 1000'

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

   A. AT ANTENNA SECTORS:
   - INSTALL KATHREIN ANTENNA AT POS 3. (TOTAL OF 3)
   - INSTALL (1) DC SQUID.
   - INSTALL RRUS-32 B66 AT POS. 4. (TOTAL OF 3)
   - INSTALL B14-4478 AT POS. 3. (TOTAL OF 3)

   B. AT THE EQUIPMENT SHELTER
   - INSTALL NEWLY PROPOSED RRU RACK TO HOLD THE EXISTING/PROPOSED EQUIPMENT.
   - INSTALL RRUS-E2 IN NEWLY PROPOSED RACK. (TOTAL OF 3)
   - INSTALL RRUS-12 IN NEWLY PROPOSED RACK. (TOTAL OF 3)
   - INSTALL (12) SURGE ARRESTORS. (APTDC-BDFDM-DBW)
   - REPLACE TMA AND DIPLEXERS WITH (6) LOW BAND COMBINERS. (DBC0061F1V51-2)
   - IN LTE RACK, UPGRADE DUS TO 5216+IDLe.
   - IN LTE RACK, ADD 2ND 5216 AND 2ND XMU.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2109
AT&T SITE NAME:	STAMFORD NORTH
SITE ADDRESS:	1590 NEWFIELD AVENUE SOUTHBURY, CT 06488
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
AT&T PACE ID NUMBER:	PACE JOB 1 - MRCTB022782 PACE JOB 2 - MRCTB022706 PACE JOB 3 - MRCTB024087 PACE JOB 4 - MRCTC026723
AT&T FA LOCATION CODE:	10034979
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-06'-45.90" N LONGITUDE: 73°-32'-18.09" W GROUND ELEVATION: ±235' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	0
C-1	PLANS AND ELEVATION	0
C-2	ANTENNA CONFIGURATION DETAILS	0
C-3	DETAILS	0
C-4	DETAILS	0
E-1	SCHEMATIC DIAGRAM AND NOTES	0
E-2	WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/05/18	TJR	DMD	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY

STAMFORD NORTH
CT2109 - LTE 4C/5C/6C/7C FIRSTNET
1509 NEWFIELD AVENUE
STAMFORD, CT 06905

DATE:	03/22/18
SCALE:	AS NOTED
JOB NO.	18000.02

TITLE SHEET

T-1

Sheet No. 1 of 9

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90–110 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 93 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
   - A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   - B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   - C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   - D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   - E. PIPE---ASTM A53 (FY = 35 KSI)
   - F. CONNECTION BOLTS---ASTM A325-N
   - G. U-BOLTS---ASTM A36
   - H. ANCHOR RODS---ASTM F 1554
   - I. WELDING ELECTRODE---ASTM E 70XX
2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE."
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:
   - A. SHERWIN WILLIAMS POLANE-B
   - B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.
2. COAXIAL CABLES:
   - A. ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
   - B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
   - C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

PROPOSED ANTENNA AND APPURTENANCE SCHEDULE

ANTENNAS								APPURTENANCES			
SECTOR	POSITION	AZIMUTH	DOWNTILT (M)	MAKE & MODEL	RAD CENTER (AGL)	TECHNOLOGY	STATUS	TMA (QTY)	DIPLEXER/TRIPLEXER (QTY)	RRU (QTY)	FEEDER TYPE
ALPHA	POS. 1	23°	0°	POWERWAVE (7770)	152'	UMTS 850	REMAIN	PWAV: LGP21401 DUAL BAND – 850BP (2)	PWAV: LGP21901 (2) (2 ON GROUND PER SECTOR)		1⅝" COAX (2)
ALPHA	POS. 2	30°	0°	CCI (OPA-65R-LCUU-H6)	152'	LTE WCS/850/700DE	REMAIN			RRUS-E2 (1), RRUS-12 (1), RRUS-32 (1)	1⅝" COAX (3), FIBER AND DC POWER
ALPHA	POS. 3	30°	0°	KATHREIN (800-10965)	152'	LTE 700 B14	NEW		KAELUS: DBC0061F1V51-2 (2) (1 ON GROUND, 1 ABOVE PER SECTOR)	B14-4478 (1),	FIBER AND DC POWER
ALPHA	POS. 4	30°	0°	QUINTEL (QS66512-2)	152'	LTE 700/PCS	REMAIN			RRUS-11 (1), RRUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER
BETA	POS. 1	143°	0°	POWERWAVE (7770)	152'	UMTS 850	REMAIN	PWAV: LGP21401 DUAL BAND – 850BP (2)	PWAV: LGP21901 (2) (2 ON GROUND PER SECTOR)		1⅝" COAX (2)
BETA	POS. 2	150°	0°	CCI (OPA-65R-LCUU-H6)	152'	LTE WCS/850/700DE	REMAIN			RRUS-E2 (1), RRUS-12 (1), RRUS-32 (1)	1⅝" COAX (3), FIBER AND DC POWER
BETA	POS. 3	150°	0°	KATHREIN (800-10965)	152'	LTE 700 B14	NEW		KAELUS: DBC0061F1V51-2 (2) (1 ON GROUND, 1 ABOVE PER SECTOR)	B14-4478 (1),	FIBER AND DC POWER
BETA	POS. 4	150°	0°	QUINTEL (QS66512-2)	152'	LTE 700/PCS	REMAIN			RRUS-11 (1), RRUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER
GAMMA	POS. 1	263°	0°	POWERWAVE (7770)	152'	UMTS 850	REMAIN	PWAV: LGP21401 DUAL BAND – 850BP (2)	PWAV: LGP21901 (2) (2 ON GROUND PER SECTOR)		1⅝" COAX (2)
GAMMA	POS. 2	270°	0°	CCI (OPA-65R-LCUU-H6)	152'	LTE WCS/850/700DE	REMAIN			RRUS-E2 (1), RRUS-12 (1), RRUS-32 (1)	1⅝" COAX (3), FIBER AND DC POWER
GAMMA	POS. 3	270°	0°	KATHREIN (800-10965)	152'	LTE 700 B14	NEW		KAELUS: DBC0061F1V51-2 (2) (1 ON GROUND, 1 ABOVE PER SECTOR)	B14-4478 (1),	FIBER AND DC POWER
GAMMA	POS. 4	270°	0°	QUINTEL (QS66512-2)	152'	LTE 700/PCS	REMAIN			RRUS-11 (1), RRUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER

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NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE

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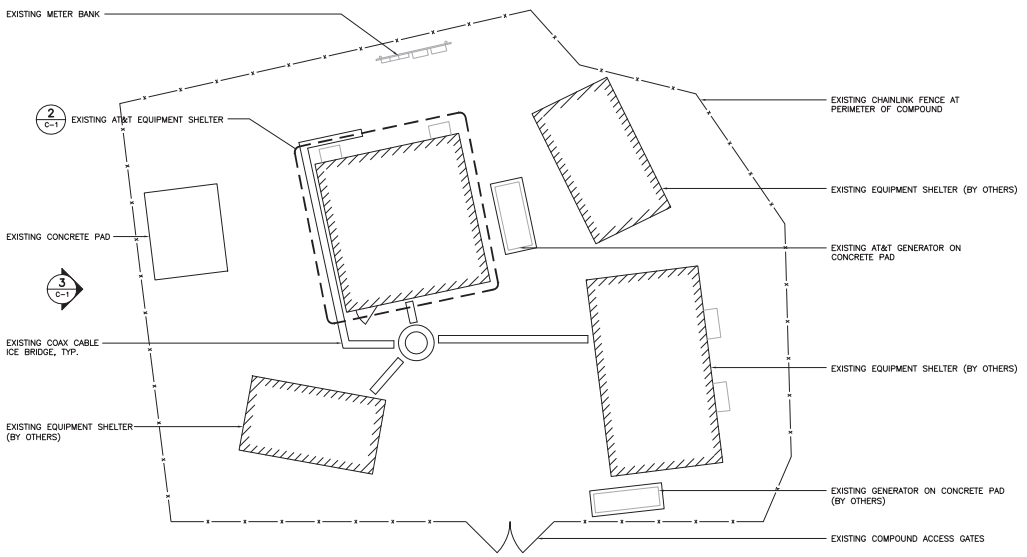
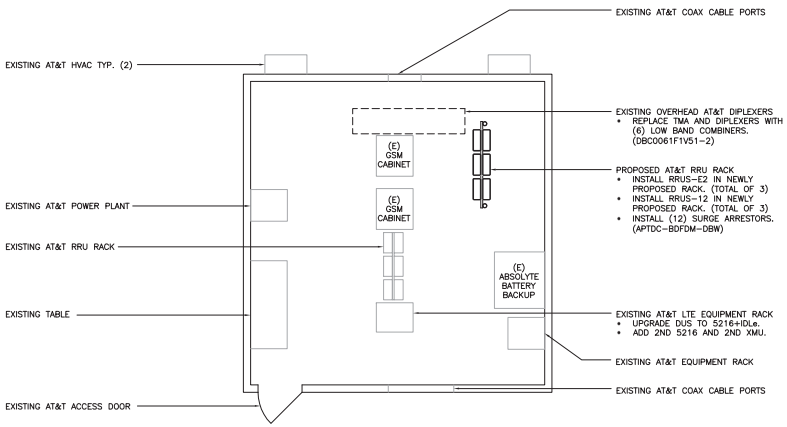


1 C-1 **PARTIAL SITE PLAN**
SCALE: 1/8" = 1'-0"

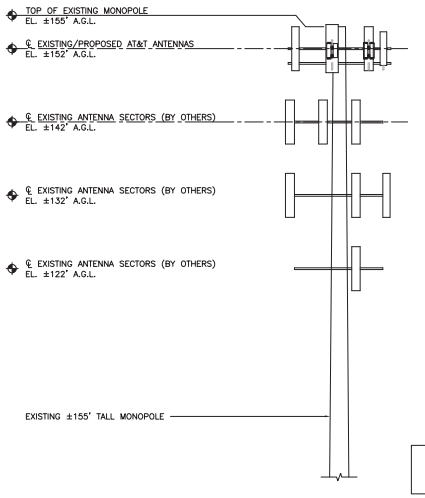
TRUE NORTH

GRAPHIC SCALE
0 8 16 32
(IN FEET)
1/8 inch = 1 ft.

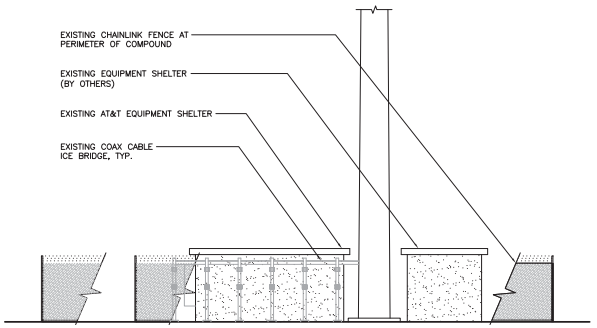


2 C-1 **PROPOSED EQUIPMENT LAYOUT PLAN**
SCALE: 1/4" = 1'-0"

TRUE NORTH



NOTE:
SOME ANTENNA EQUIPMENT (BY OTHERS) NOT SHOWN FOR CLARITY.



3 C-1 **PARTIAL NORTHEAST ELEVATION - PROPOSED**
SCALE: 1/8" = 1'-0"

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PLANS AND ELEVATION

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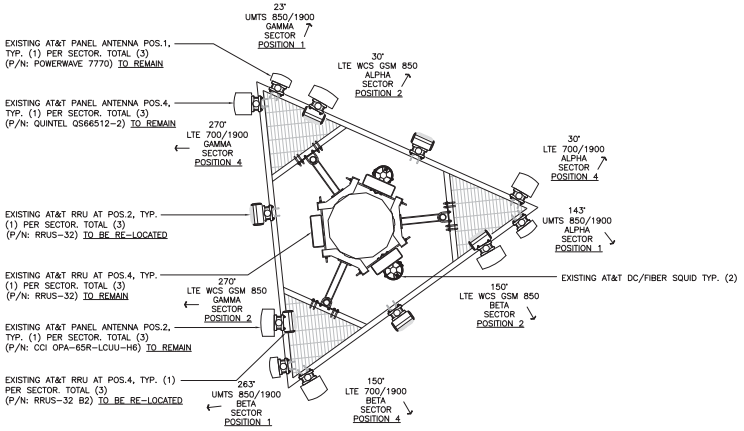
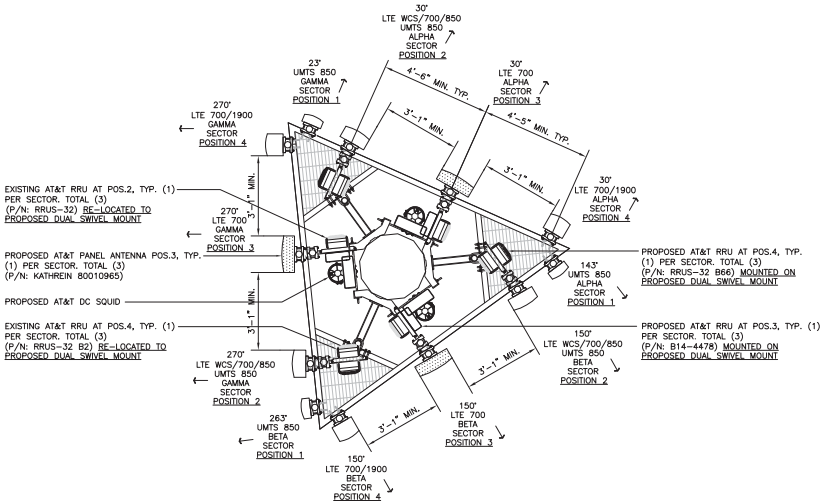
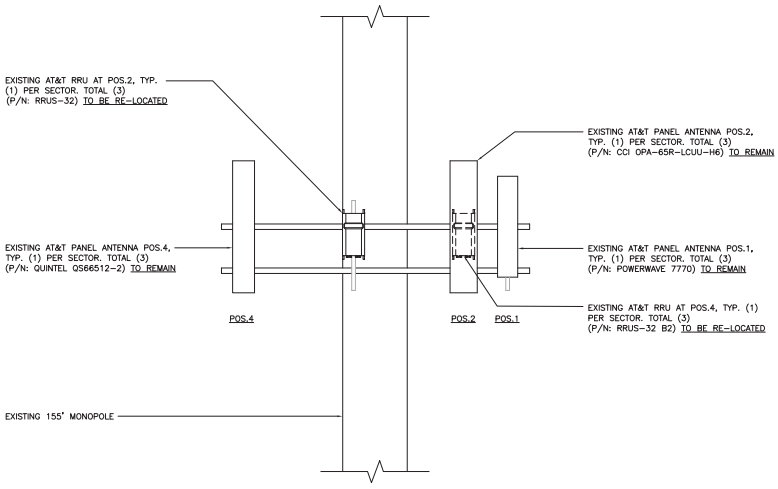
Sheet No. 3 of 9



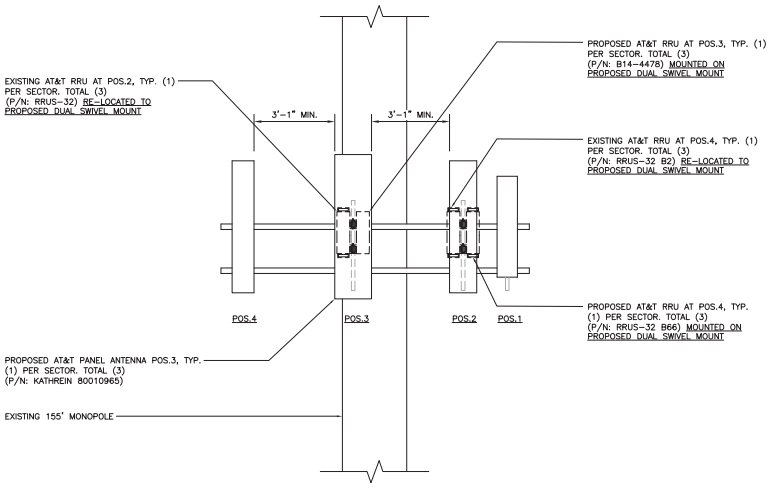
1 C-2 **EXISTING ANTENNA PLAN**
SCALE: 3/8" = 1'-0"



2 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 3/8" = 1'-0"



1A C-2 **EXISTING ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"



2A C-2 **PROPOSED ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"

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ANTENNA CONFIGURATION DETAILS

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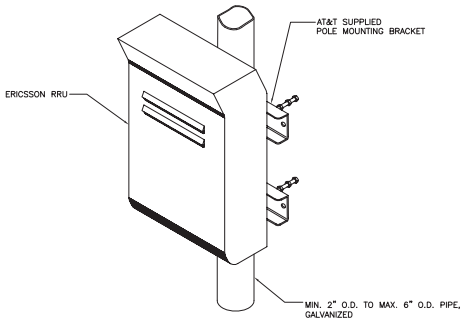


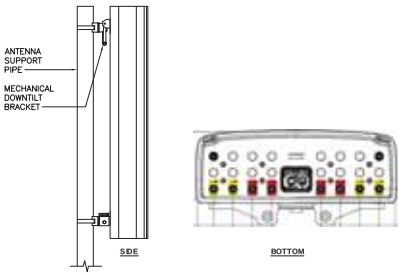
ISOMETRIC VIEW

NOTES:

1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 C-3 TYPICAL RRUS MOUNTING DETAILS

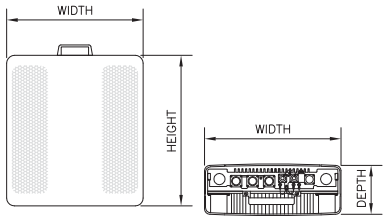
NOT TO SCALE



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KATHREIN MODEL: 80010965	78.7"L x 20"W x 6.9"D	108.6 LBS.

2 C-3 PROPOSED ANTENNA DETAIL

NOT TO SCALE



FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

3 C-3 ERICSSON RRUS 11 DETAIL

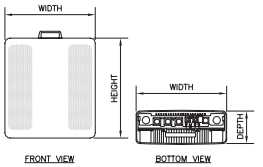
NOT TO SCALE

LOW BAND COMBINER

DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBC0061F1V51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

4 C-3 KAELUS DBC0061F1V51-2 DETAIL

NOT TO SCALE

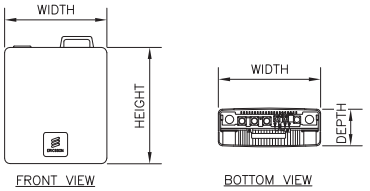


FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS E2	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

5 C-3 ERICSSON RRUS E2 DETAIL

NOT TO SCALE

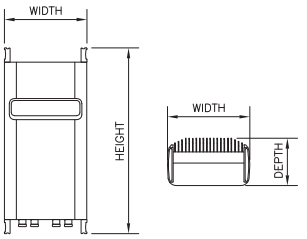


FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: B14 4478	14.9"L x 13.1"W x 7.3"D	60 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

6 C-3 ERICSSON B14 4478 DETAIL

NOT TO SCALE



FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32 B66	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

7 C-3 ERICSSON RRUS-32 B66 DETAIL

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DETAILS

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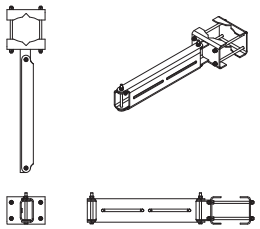
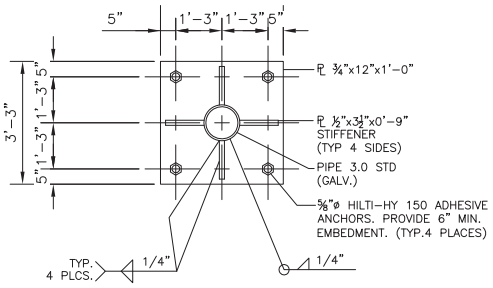
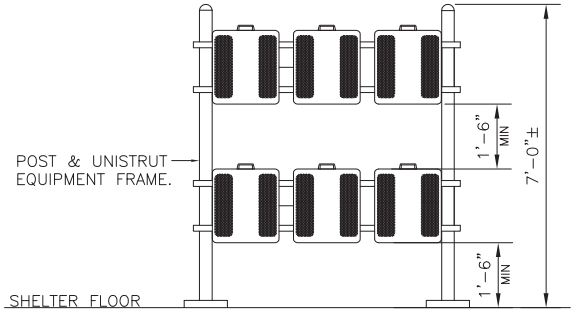


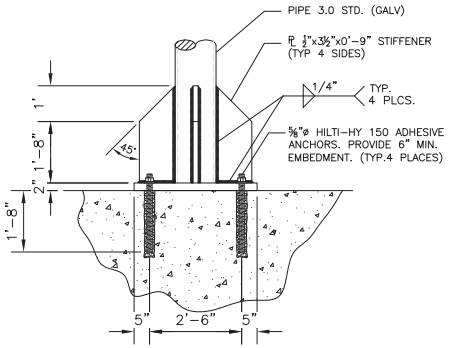
RRU DUAL SWIVEL MOUNT		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: SITE PRO 1 PART NO.: RRUDSM	27.75"L x 6.5"W x 4.7"D	39.4 LBS.

1 / C-4 **RRH DUAL SWIVEL MOUNT DETAIL**
NOT TO SCALE

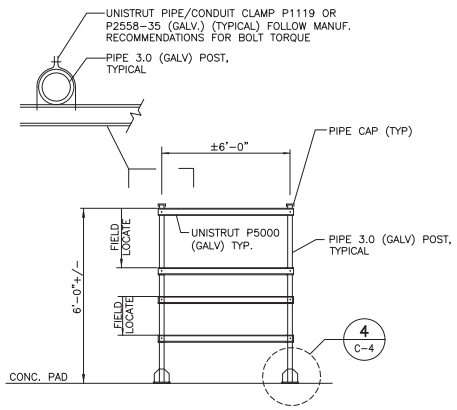




2 / C-4 **EQUIPMENT FRAME ELEVATION DETAIL**
NOT TO SCALE



4 / C-4 **FRAME TO CONCRETE CONNECTION DETAIL**
NOT TO SCALE

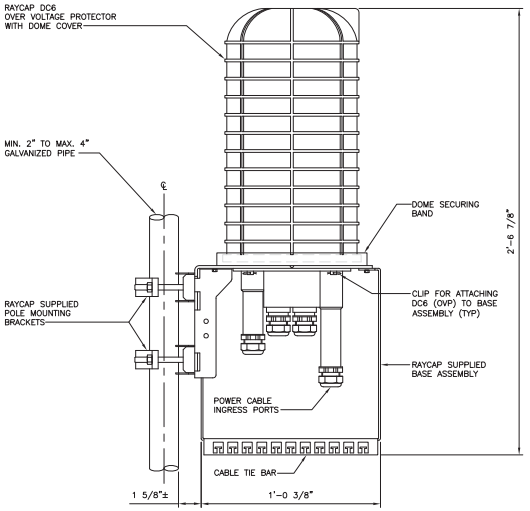


5 / C-4 **EQUIPMENT MOUNTING FRAME DETAIL (TYP)**
NOT TO SCALE

SURGE ARESSTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ANDREW MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

3 / C-3 **ANDREW APTDC-BDFDM-DB DETAIL**
NOT TO SCALE



SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
	MAKE: RAYCAP (SQUID) MODEL: DC6-48-60-18-8F	(1) PER SITE	TOWER, ADJACENT TO AT&T ANTENNAS AND RRUs.	20 LBS. (WITHOUT MOUNT)

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.
3. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

6 / C-4 **TYPICAL DC SQUID DETAIL**
NOT TO SCALE

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DETAILS

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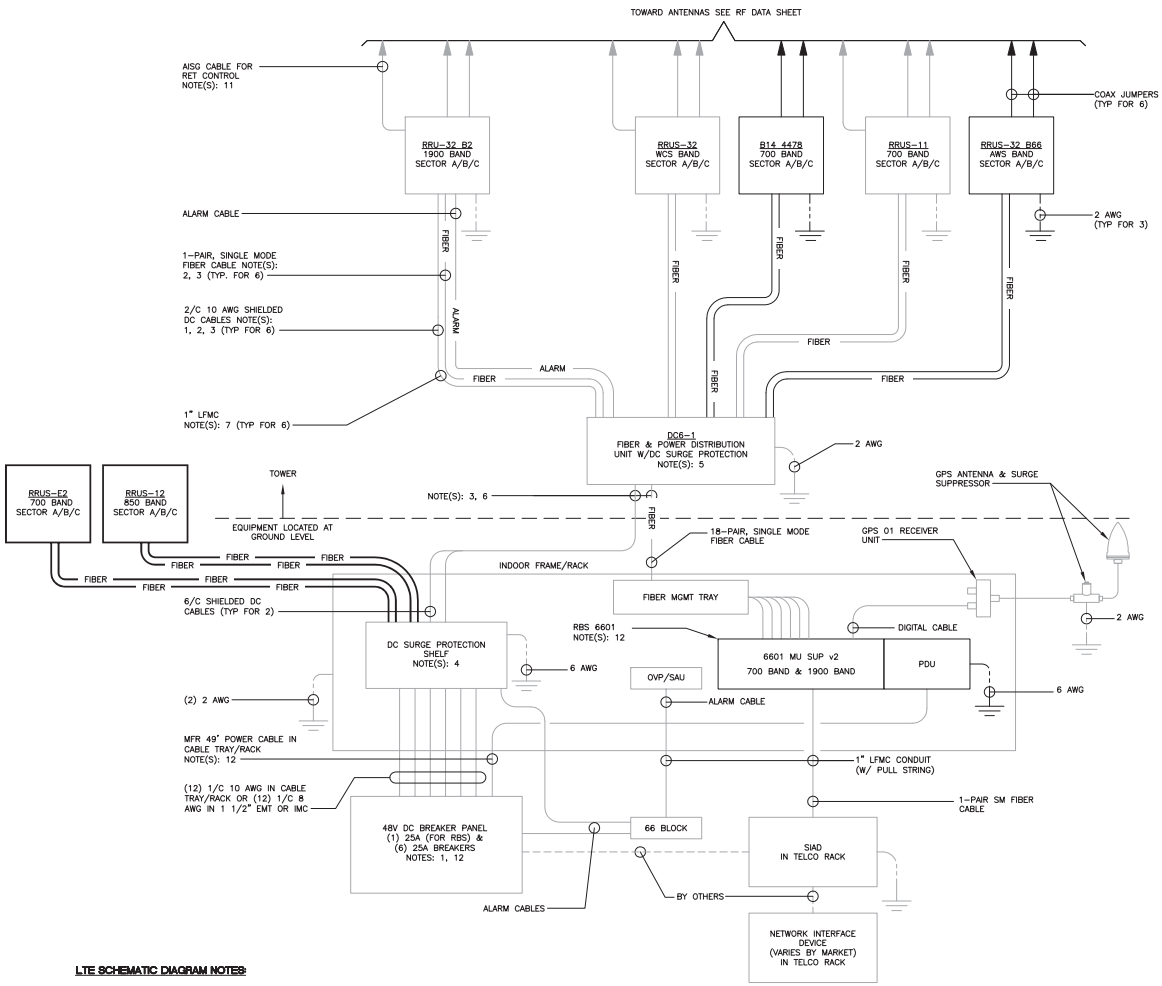

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCX-48-60-RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

1 / E-1 **SCHEMATIC DIAGRAM**
NOT TO SCALE

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/05/18	TJR	DMD	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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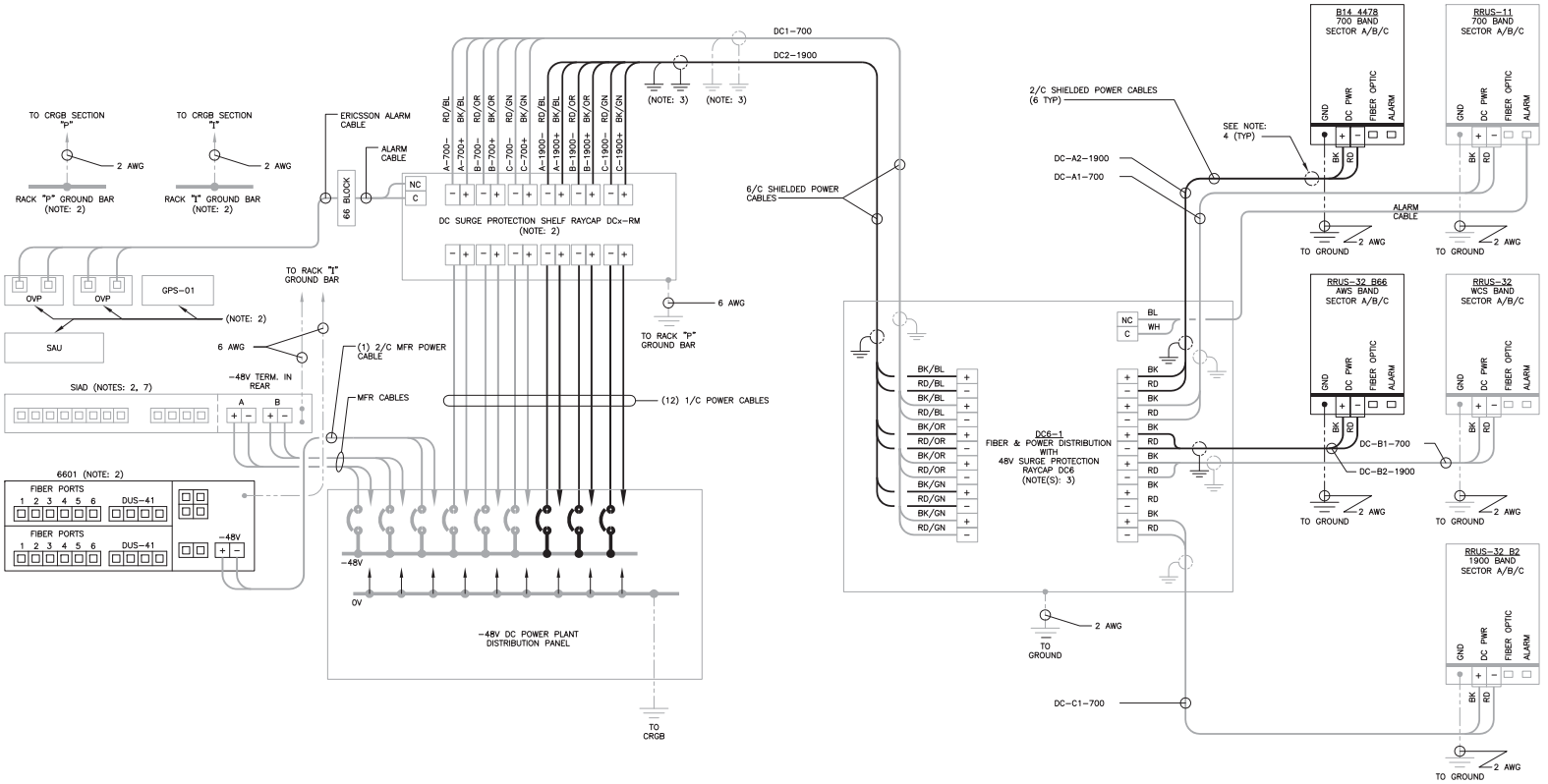
CT2109 - LTE 4C/5C/6C/7C FIRSTNET
1509 NEWFIELD AVENUE
STAMFORD, CT 06905

DATE:	03/22/18
SCALE:	AS NOTED
JOB NO.	18000.02

SCHEMATIC DIAGRAM AND NOTES

E-1

Sheet No. 7 of 9



LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

1 / E-2 **WIRING DIAGRAM**
NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/05/18	TJR	DMD	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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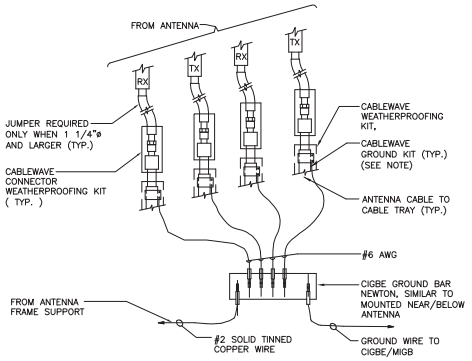
STAMFORD, CT 06905

DATE:	03/22/18
SCALE:	AS NOTED
JOB NO.	18000.02

WIRING DIAGRAM

E-2

Sheet No. 8 of 9



NOTE:

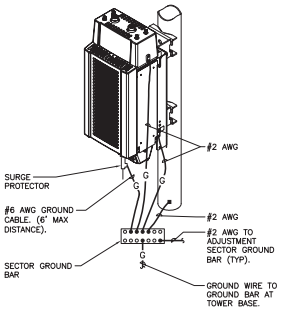
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 E-3 CONNECTION OF GROUND WIRES TO GROUND BAR

NOT TO SCALE

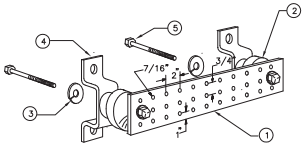
EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:

1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



2 E-3 RRU POLE MOUNT GROUNDING

NOT TO SCALE

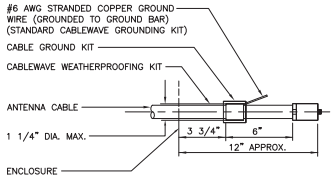


LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

3 E-3 GROUND BAR DETAIL

NOT TO SCALE

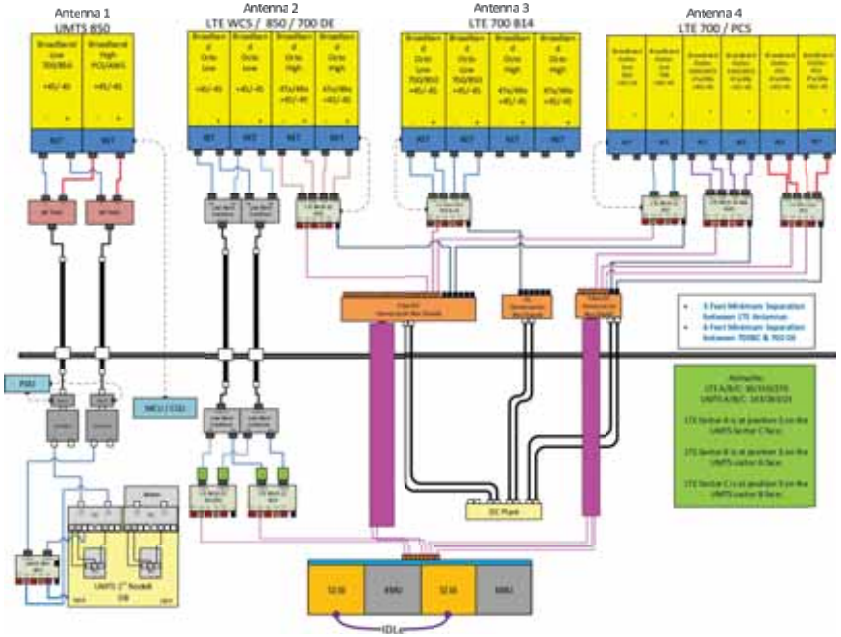


NOTE:

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

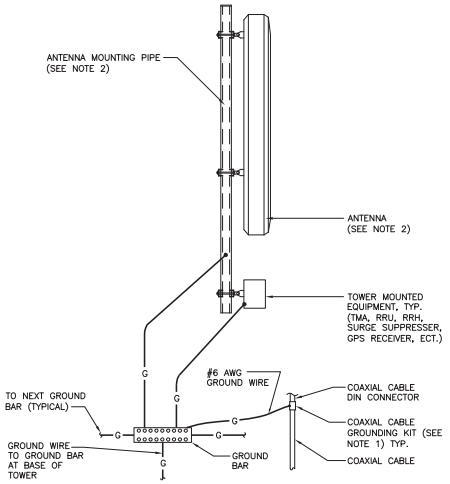
4 E-3 ANTENNA CABLE GROUNDING DETAIL

NOT TO SCALE



5 E-3 RF PLUMBING DIAGRAM

NOT TO SCALE



NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

6 E-3 TYPICAL ANTENNA GROUNDING DETAIL

NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/05/18	TJR	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

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STAMFORD, CT 06905

DATE:	03/22/18
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TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 9 of 9

Exhibit 4

AT&T at 1590 Newfield Avenue; Stamford, CT 06905

EASTOVER ROAD

Location	EASTOVER ROAD	**Mblu**	004/ 2955/ / /
Acct#	004-2955	**Owner**	CELLCO PARTNERSHIP
Assessment	$703,460	**Appraisal**	$1,004,930
PID	183864	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$412,320	$592,610	$1,004,930

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$288,630	$414,830	$703,460

Owner of Record

Owner	CELLCO PARTNERSHIP
Co-Owner	VERIZON WIRELESS
Address	P.O. BOX 2549 ADDISON, TX 75001

Sale Price	$594,710
Book & Page	4954/ 250
Sale Date	03/30/1998
Instrument	00

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
CELLCO PARTNERSHIP	$594,710	4954/ 250	00	03/30/1998
METRO MOBILE CTS OF FAIRFIELD	$0	3571/ 172	00	05/23/1990

Building Information

Building 1 : Section 1

Year Built: 1994
Living Area: 415

Building Attributes	
Field	**Description**
STYLE	Telephone Bldg
Stories:	1
Occupancy	1

Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Radiant
AC Type	None
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	None
Frame Type	Wood Frame
Baths/Plumbing	None
Ceiling/Wall	Ceil & Mn Wall
Rooms/Prtns	Light
Wall Height	9
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\12\83/3

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	415	415
		415	415

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	200
Description	Commercial MDL-94
Zone	RA1
Neighborhood	0100

Land Line Valuation

Size (Acres)	3.46
Depth	
Assessed Value	$414,830
Appraised Value	$592,610

Alt Land Appr Category No

Outbuildings

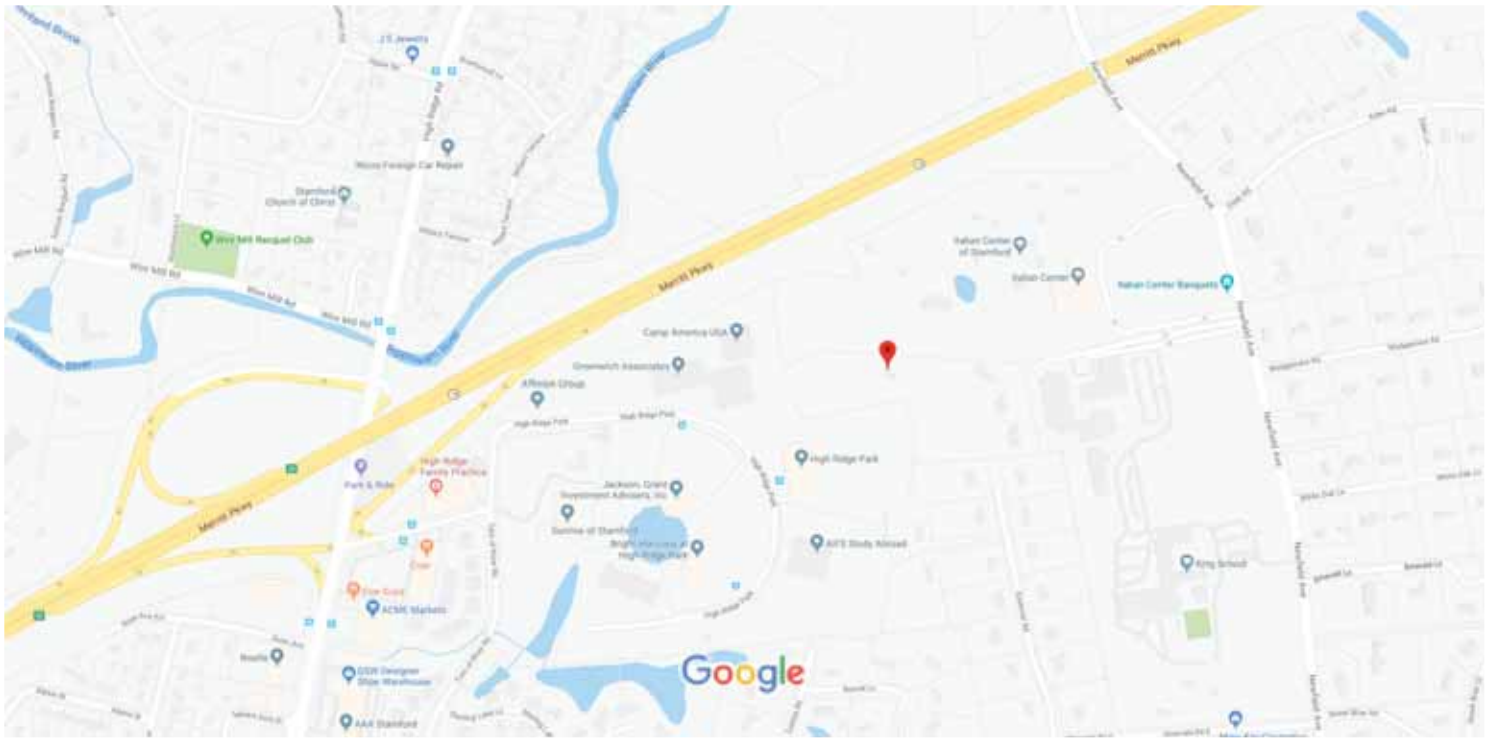
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
AP1	Fence Chn Lk			1596 L.F.	$13,770	1
CEL1	Cell Tower			2 SITES	$370,500	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$394,720	$538,730	$933,450
2015	$394,720	$538,730	$933,450
2014	$394,720	$538,730	$933,450

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$276,310	$377,110	$653,420
2015	$276,310	$377,110	$653,420
2014	$276,310	$377,110	$653,420

Google Maps 41°06'45.9"N 73°32'18.1"W



Map data ©2018 Google 200 ft

41°06'45.9"N 73°32'18.1"W

41.112739, -73.538350

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hon. David Martin, Mayor
Stamford Government Center
Stamford, CT 06901

9590 9402 1864 6104 9543 81

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 7440

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Chief
Robert DeMarco Building
Stamford Government Ctr.
1th Floor
888 Washington Blvd.
Stamford CT 06901

9590 9402 1864 6104 9543 74

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 6191

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Vinetta Mathur, Zoning
Stamford Government Ctr.
888 Washington Blvd.
Stamford, CT 06901

9590 9402 1864 6104 9543 98

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 7464

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Shawn Dunn, APM
American Tower
10 Presidential Way
Woburn, MA 01801

9590 9402 1864 6104 9544 04

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 7457

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*
Donna Long

C. Date of Delivery
4-18-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☑ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt