July 6, 2018

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

Regarding:	Notice of Exempt Modification – Remove and replace 3 panel antennas, add 3 panel antennas, remove and replace 3 remote radio units (RRUs), add 3 RRU's, add 1 squid surge suppressor, and add 3 diplexers.
Property Address:	133 Horse Fence Hill Road; Southbury, CT 06488
Applicant:	AT&T Mobility ("AT&T"), Site # CT2126

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 150-foot monopole at the above-referenced address, latitude 41.45993889, longitude 73.24498056. Said monopole is owned and operated by American Tower Corporation and the ground space is owned by Smith Lynn Revocable Family Trust. The existing equipment shelter is 22.70'x 24.80' totaling 562.96 square feet.

AT&T desires to modify its existing telecommunications facility by removing and replacing 3 panel antennas, adding 3 panel antennas, removing and replacing 3 RRUs, adding three RRUs, adding 1 squid surge suppressor and adding 3 diplexers. The centerline height of said antennas is and will remain at 153' 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 Jeff Manville, the First Selectman of the Town of Southbury, DeLoris Curtis for the Town of Southbury Planning Department, Mark D. Cody, for the Town of Southbury Building Department, American Tower Corporation, the tower owner, and the Smith Lynn Revocable Family Trust, property owner.

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

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's antennas and ancillary equipment will be installed at the existing mount height of 153' atop the 150' Monopole tower.

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

2. The proposed modifications will not involve any changes to ground-space footprint and, therefore will not require an extension of the site boundary.
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 LLC dated January 17, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed panel antenna and RRU swap, and addition of antennas, RRUs, squid, and diplexers 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

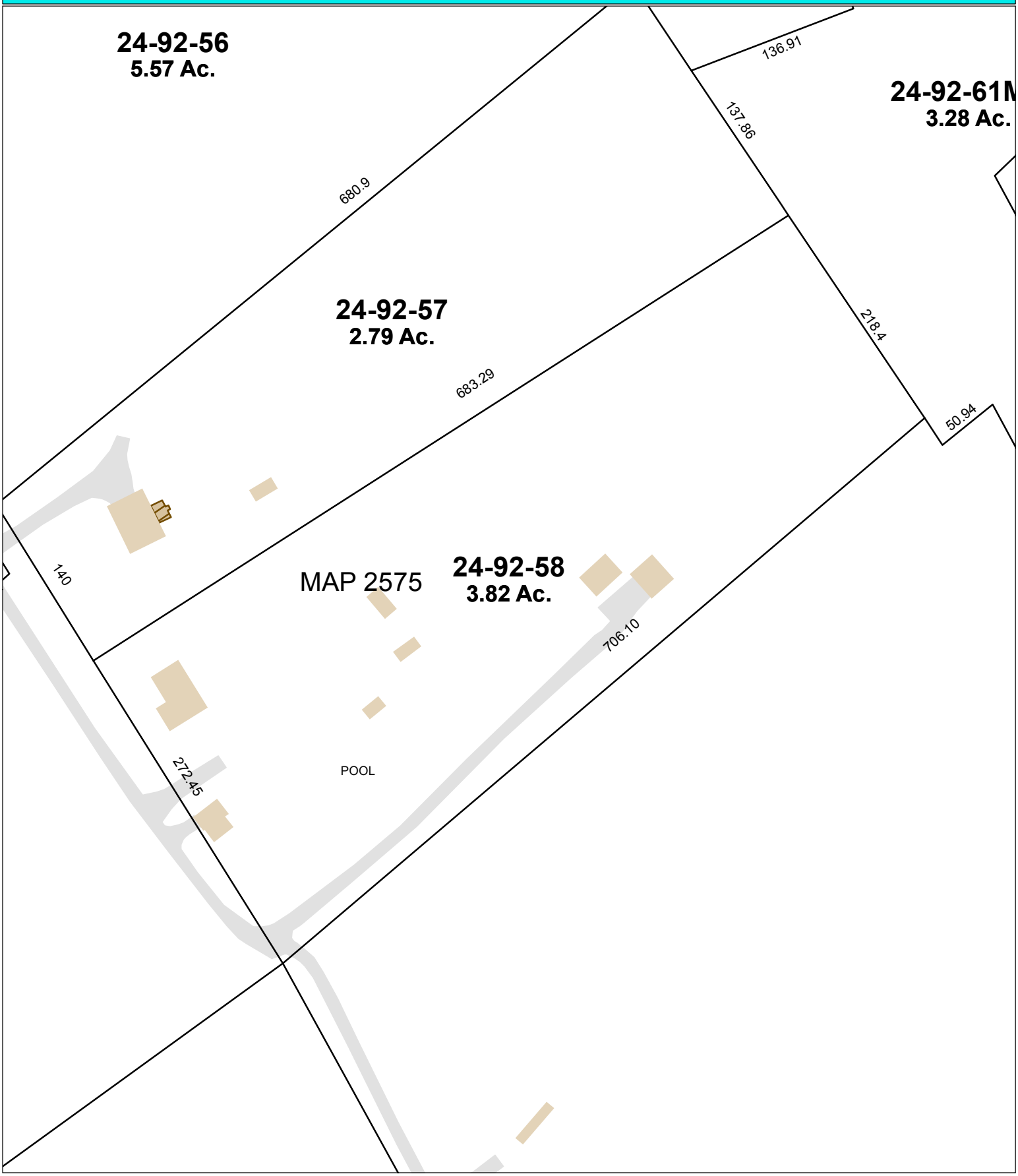
Enclosures:

Structural Analysis dated January 17, 2018 by American Tower LLC;
Radio Frequency Emissions Analysis Report dated March 7, 2018 by Centerline Communications;
Construction Plans dated June 22, 2018 by Centek Engineering;
Town of Southbury GIS Map depicting location of the parcel on which this site is located;
Property Card for 133 Horse Fence Hill Road; Southbury, CT

CC: First Selectman of the Town of Southbury Jeff Manville (municipality)
DeLoris Curtis, Town of Southbury Planning Department (municipality)
Mark D. Cody, Town of Southbury Building Department (municipality)
American Tower Corporation c/o Ryan Tierney (monopole owner)
Smith Lynn Revocable Family Trust (landowner)

Town of Southbury Connecticut - Assessment Parcel Map

Parcel: 24-92-58 **Location:** 133 HORSE FENCE HILL ROAD



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Approximate Scale: 1 inch = 100 feet

0 25 50 75 100 Feet

Map Produced April 2018

133 HORSE FENCE HILL ROAD

Location	133 HORSE FENCE HILL ROAD	**Mblu**	24/ 92/ 58/ /
		Acct#	00214500
Owner	SMITH LYNN REV FAM TRUST	**Assessment**	$211,040
Appraisal	$301,500	**PID**	2310
Building Count	1		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$89,140	$212,360	$301,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$62,390	$148,650	$211,040

Owner of Record

Owner	SMITH LYNN REV FAM TRUST	**Sale Price**	$0
Co-Owner	C/O PA HAMILTON	**Certificate**	
Address	PO BOX 747 SOUTHBURY, CT 06488-	**Book & Page**	493/1152
		Sale Date	08/19/2005
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SMITH LYNN REV FAM TRUST	$0		493/1152	25	08/19/2005
SMITH SCOTT S & LYNN	$0		1640/ 144	25	03/15/1983

Building Information

Building 1 : Section 1

Year Built:	1950
Living Area:	1,104
Replacement Cost:	$124,272
Building Percent Good:	66

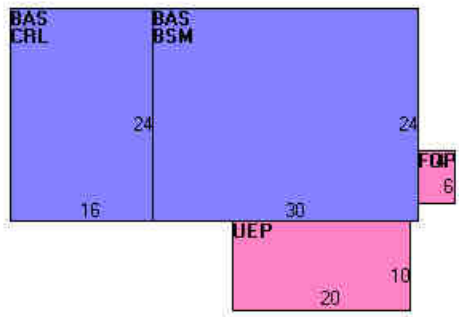
Replacement Cost
Less Depreciation: $82,020

Building Attributes	
Field	**Description**
Style	Ranch
Model	Residential
Grade:	D
Stories	1
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Forced Hot Air
AC Percent	0
Total Bedrooms:	3 Bedrooms
Full Bthrms:	2
Half Baths:	0
Extra Fixtures	0
Total Rooms:	5
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Pln FPL:	0
Det FPL:	0
Gas Fireplace(s)	0
% Attic Fin	0
LF Dormer	0
Foundation	Conc Block
Bsmt Gar(s)	0
Bsmt %	75
SF FBM	0
Fin Bsmt Qual	
Bsmt Access	Hatchway

Building Photo

(http://images.vgsi.com/photos/SouthburyCTPhotos//\00\00\11/

Building Layout



(http://images.vgsi.com/photos/SouthburyCTPhotos//Sketches/2

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,104	1,104
BSM	Basement	720	0
CRL	Crawl Space	384	0
FOP	Open Porch	24	0
UEP	Unfin. Enclosed Porch	200	0
		2,432	1,104

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	101
Description	Res Dwelling
Zone	R-60
Neighborhood	25
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	3.82
Frontage	0
Depth	0
Assessed Value	$148,650
Appraised Value	$212,360

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FGR1	Garage	FR	Frame	336 S.F.	$4,700	1
SHD1	Shed	FR	Frame	200 S.F.	$1,200	1
SHD1	Shed	FR	Frame	160 S.F.	$960	1
SHD1	Shed	FR	Frame	240 S.F.	$260	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$89,140	$212,360	$301,500
2016	$99,290	$216,960	$316,250
2012	$99,290	$216,960	$316,250

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$62,390	$148,650	$211,040
2016	$69,500	$151,870	$221,370
2012	$69,500	$151,870	$221,370

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**Southbury, CT**
ATC Site Number	:	**302519**
Engineering Number	:	**OAA720735_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**SNET 5641-0100**
Carrier Site Number	:	**CT2126**
Site Location	:	**133 Horse Fence Hill Rd** **Southbury, CT 06488-2106** **41.459972,-73.245000**
County	:	**New Haven**
Date	:	**January 17, 2018**
Max Usage	:	**97%**
Result	:	**Pass**

Prepared By:
Felix Buabeng
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
BRYAN K LANIER
32586
LICENSED
PROFESSIONAL ENGINEER

Jan 19 2018 6:10 PM cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	ITT Meyers Site #CT-0055, dated May 21, 2002
Foundation Drawing	Girard Project #1C140, dated November 19, 1987
Modifications	SpectraSite Site #CT-0055, dated May 21, 2002

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:	3
Crest Height:	148 ft
Spectral Response:	Ss = 0.20, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	153.0	6	Powerwave 7020.00 Dual Band RET	Platform w/ Handrails	(12) 1 5/8" Coax (1) 3" Conduit (1) 0.39" Fiber Trunk (2) 0.78" 8 AWG 6	AT&T Mobility
		1	Raycap DC6-48-60-18-8F ("Squid")			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Powerwave 7770.00			
113.0	114.0	6	RFS FD9R6004/1C-3L	T-Arms	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x40-AWS			
		3	Decibel 932DG90T2E-M			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Andrew HBX-6517DS-VTM (13.2lbs)			
		3	Powerwave P65-16-XL-2			
		3	Andrew LNX-6514DS-VTM (72.7" height)			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	153.0	3	Powerwave 7770.00	-	-	AT&T Mobility
		3	KMW AM-X-CD-16-65-00T-RET			
		6	Powerwave TT08-19DB111-001			
		6	Powerwave 7020.00 Dual Band RET			
		3	Ericsson RRUS 12			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	153.0	6	Kaelus DBC0061F1V51-1	Platform w/ Handrails	(1) 0.39" Fiber Trunk (2) 0.78" 8 AWG 6 (1) 3" Conduit (1) 2" Conduit	AT&T Mobility
		6	Powerwave TT19-08BP111-001			
		1	Raycap DC6-48-60-18-8F ("Squid")			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 32 (55.1 lbs)			
		3	Quintel QS66512-2			
		3	CCI HPA-65R-BUU-H6			

[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	70%	Pass
Shaft	97%	Pass
Base Plate	45%	Pass
Flanges	81%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,179.6	76%
Axial (Kips)	28.3	95%
Shear (Kips)	24.0	32%

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) (°)
150.0	Kaelus DBC0061F1V51-1	AT&T Mobility	4.382	3.224
	Powerwave TT19-08BP111-001			
	Raycap DC6-48-60-18-8F ("Squid")			
	Ericsson RRUS 32 B2			
	Ericsson RRUS 32 (55.1 lbs)			
	Quintel QS66512-2			
	CCI HPA-65R-BUU-H6			

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

Standard Conditions

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

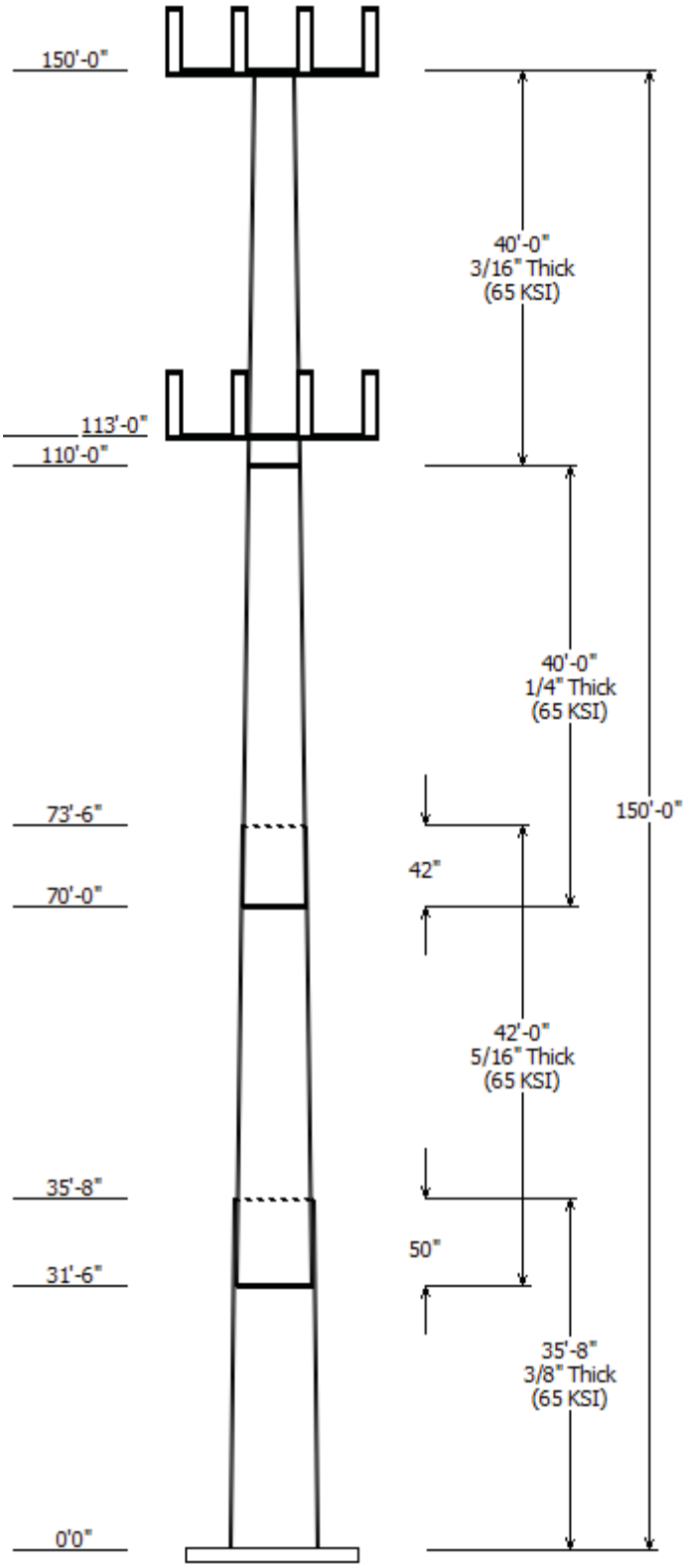
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

Pole :	302519	Code:	ANSI/TIA-222-G
Location :	Southbury, CT		
Description :	150 ft ITT Meyer Type "B" Monopole		
Client :	AT&T MOBILITY	Struct Class :	II
Shape :	12 Sides	Exposure :	B
Height :	150.00 (ft)	Topo :	3
Base Elev (ft):	0.00		
Taper:	0.156700 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	35.667	31.79	37.38	0.375		0.000	12 Sides	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	12 Sides	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	12 Sides	65
4	40.000	15.00	21.26	0.188	Butt Joint	0.000	12 Sides	65

Discrete Appurtenance

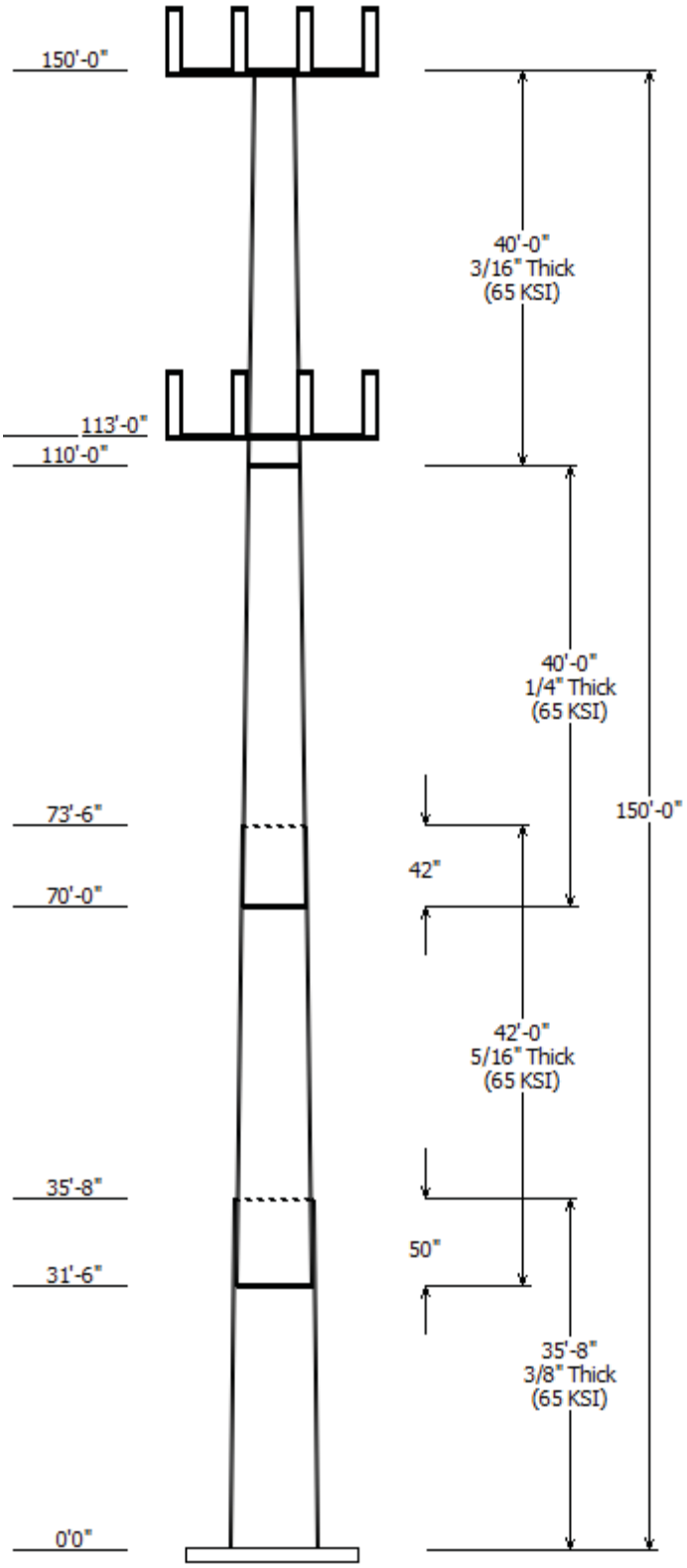
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	153.000	3	CCI HPA-65R-BUU-H6
150.000	153.000	3	Quintel QS66512-2
150.000	153.000	3	Ericsson RRUS 32 (55.1 lbs)
150.000	153.000	3	Ericsson RRUS 32 B2
150.000	153.000	6	Powerwave TT19-08BP111-001
150.000	153.000	6	Kaelus DBC0061F1V51-1
150.000	153.000	1	Raycap DC6-48-60-18-8F
150.000	153.000	6	Powerwave Allgon 7020.00
150.000	153.000	1	Raycap DC6-48-60-18-8F
150.000	153.000	3	Ericsson RRUS 11 (Band 12) (55
150.000	150.000	1	Flat Platform w/ Handrails
150.000	153.000	3	Powerwave Allgon 7770.00
113.000	114.000	3	Powerwave Allgon P65-16-XL-
113.000	114.000	6	RFS FD9R6004/1C-3L
113.000	114.000	3	Alcatel-Lucent RRH2x40-AWS
113.000	114.000	3	Decibel 932DG90T2E-M
113.000	113.000	3	Round T-Arms
113.000	114.000	3	Andrew LNX-6514DS-VTM
113.000	114.000	3	Andrew HBX-6517DS-VTM
113.000	114.000	1	RFS DB-T1-6Z-8AB-0Z

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
10.000	113.0	1 5/8" Coax	No
10.000	150.0	0.39" Fiber Trunk	No
10.000	150.0	0.78" 8 AWG 6	No
10.000	150.0	0.78" 8 AWG 6	No
10.000	150.0	1 5/8" Coax	No
0.000	150.0	2" Conduit	No
0.000	150.0	3" Conduit	No
0.000	22.000	#20 Dywidag	Yes
0.000	113.0	1 5/8" Hybriflex	No

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



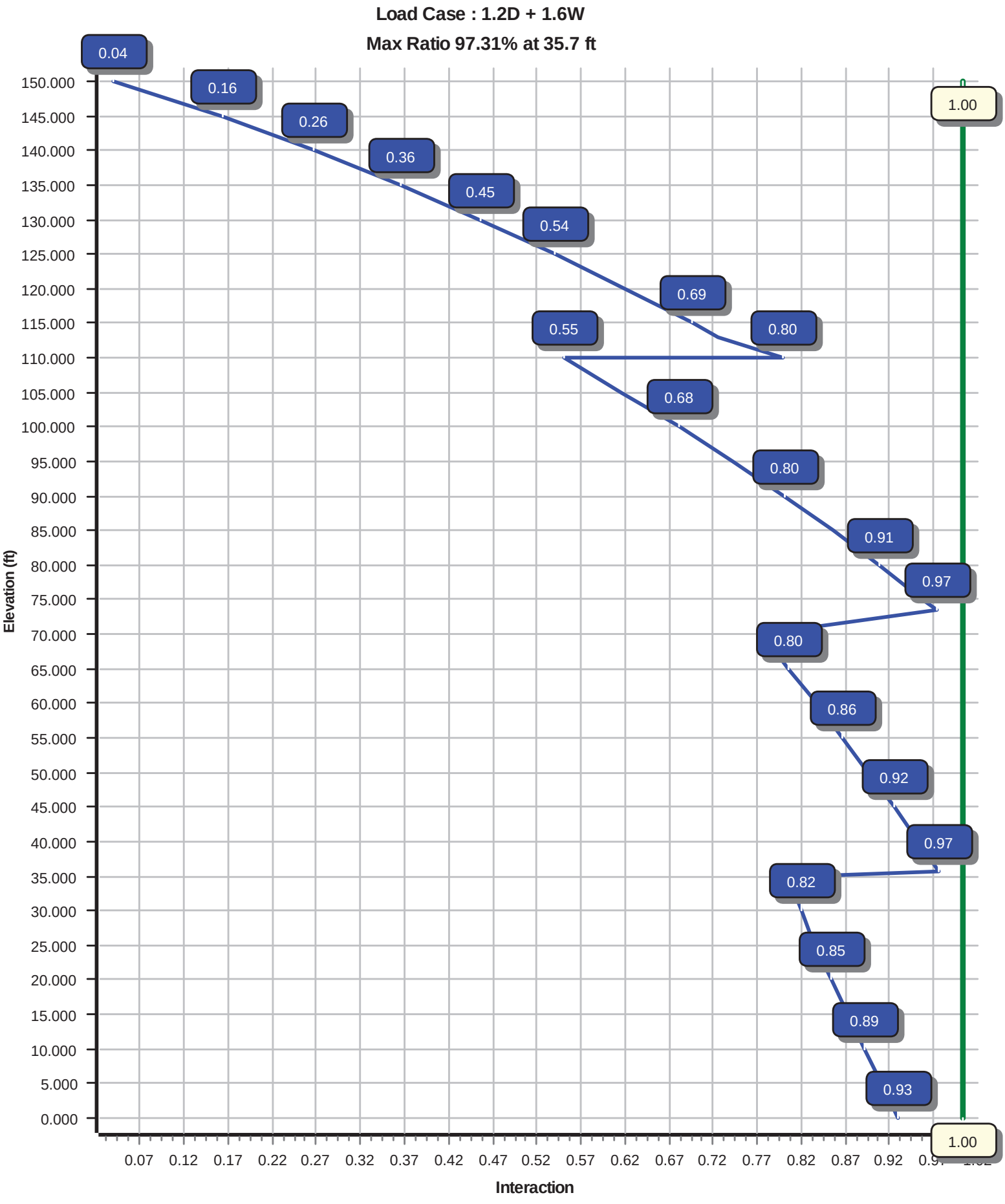
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2179.64	23.96	28.28
0.9D + 1.6W	2132.53	23.94	21.19
1.2D + 1.0Di + 1.0Wi	584.86	5.85	45.29
(1.2 + 0.2Sds) * DL + E ELFM	122.32	0.93	28.31
(1.2 + 0.2Sds) * DL + E EMAM	236.99	1.83	28.31
(0.9 - 0.2Sds) * DL + E ELFM	118.59	0.92	19.53
(0.9 - 0.2Sds) * DL + E EMAM	229.26	1.82	19.53
1.0D + 1.0W	562.20	6.27	23.63

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 97.31% at 35.7 ft
0.04
0.16
0.26
0.36
0.45
0.54
0.69
0.55
0.80
0.68
0.80
0.91
0.97
0.80
0.86
0.92
0.97
0.82
0.85
0.89
0.93
1.00
1.00
150.000
145.000
140.000
135.000
130.000
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)
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
Interaction

Site Number:	302519	Code: ANSI/TIA-222-G	
Site Name:	Southbury, CT	Engineering Number:OAA720735_C3_01	1/19/2018 5:17:58 PM
Customer:	AT&T MOBILITY		

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	37.38
Shape :	12 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.157
Pole Manfacturer :	ITT Meyer	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:	3	Operational Wind Speed:	60 mph
Crest Height:	148 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	3.33				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.200	S_1:	0.065	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.213	S_{d1}:	0.104		

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: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number:OAA720735_C3_01 1/19/2018 5:17:58 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip 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)
1-12	35.667	0.3750	65		0.00	5,014	37.38	0.00	44.68	7810.1	24.03	99.68	31.79	35.67	37.93	4778.9	20.04	84.78	0.156700
2-12	42.000	0.3125	65	Slip	50.00	4,237	33.06	31.50	32.96	4514.2	25.68	105.82	26.48	73.50	26.34	2303.3	20.03	84.76	0.156700
3-12	40.000	0.2500	65	Slip	42.00	2,646	27.53	70.00	21.97	2087.4	26.83	110.14	21.26	110.00	16.92	954.0	20.12	85.07	0.156700
4-12	40.000	0.1875	65	Butt	0.00	1,475	21.26	110.00	12.73	721.9	27.71	113.43	15.00	150.00	8.94	250.5	18.76	80.00	0.156700
				Shaft Weight		13,372													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
150.00	CCI HPA-65R-BUU-H6	3	0.000	3.000	51.00	9.660	0.69
150.00	Ericsson RRUS 11 (Band 12) (55	3	0.000	3.000	55.00	2.520	0.67
150.00	Ericsson RRUS 32 (55.1 lbs)	3	0.000	3.000	55.10	2.850	0.67
150.00	Ericsson RRUS 32 B2	3	0.000	3.000	53.00	2.740	0.50
150.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
150.00	Kaelus DBC0061F1V51-1	6	0.000	3.000	12.70	0.480	0.50
150.00	Powerwave Allgon 7020.00 Dual	6	0.000	3.000	2.20	0.400	0.50
150.00	Powerwave Allgon 7770.00	3	0.000	3.000	35.00	5.510	0.65
150.00	Powerwave TT19-08BP111-001	6	0.000	3.000	16.00	0.640	0.50
150.00	Quintel QS66512-2	3	0.000	3.000	111.00	8.130	0.67
150.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	3.000	31.80	1.280	1.00
150.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	3.000	31.80	1.280	1.00
113.00	Alcatel-Lucent RRH2x40-AWS	3	0.000	1.000	44.00	2.160	0.50
113.00	Andrew HBX-6517DS-VTM	3	0.000	1.000	13.20	5.240	0.69
113.00	Andrew LNX-6514DS-VTM (72.7"	3	0.000	1.000	38.80	8.170	0.69
113.00	Decibel 932DG90T2E-M	3	0.000	1.000	9.50	3.490	0.66
113.00	Powerwave Allgon P65-16-XL-2	3	0.000	1.000	33.00	8.130	0.65
113.00	RFS DB-T1-6Z-8AB-0Z	1	0.000	1.000	44.00	4.800	0.67
113.00	RFS FD9R6004/1C-3L	6	0.000	1.000	3.10	0.370	0.50
113.00	Round T-Arms	3	0.000	0.000	250.00	9.700	0.67
Totals	Num Loadings:20	64			4557.40		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	150.00	1	2" Conduit	2.38	3.65	N	0.00	N	AT&T Mobility
0.00	150.00	2	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
10.00	150.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
10.00	150.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
10.00	150.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
10.00	150.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	113.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon
10.00	113.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	22.00	4	#20 Dywidag	2.50	0.00	N	8.00	Y	--

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	37.380	44.684	7,810.1	24.03	99.68	78.5	403.6	0.0	0.0
5.00		0.3750	36.597	43.737	7,324.4	23.47	97.59	79.1	386.6	0.0	752.2
10.00		0.3750	35.813	42.791	6,859.3	22.91	95.50	79.7	370.0	0.0	736.1
15.00		0.3750	35.029	41.845	6,414.3	22.35	93.41	80.3	353.7	0.0	720.0
20.00		0.3750	34.246	40.899	5,989.0	21.79	91.32	80.9	337.8	0.0	703.9
25.00		0.3750	33.462	39.953	5,583.0	21.23	89.23	81.6	322.3	0.0	687.8
30.00		0.3750	32.679	39.007	5,195.7	20.67	87.14	81.9	307.1	0.0	671.7
31.50	Bot - Section 2	0.3750	32.444	38.723	5,083.1	20.50	86.52	81.9	302.7	0.0	198.4
35.00		0.3750	31.895	38.061	4,826.7	20.11	85.05	81.9	292.3	0.0	846.5
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.6	25.12	103.73	77.3	253.3	0.0	159.6
40.00		0.3125	31.737	31.621	3,985.6	24.53	101.56	78.0	242.6	0.0	471.3
45.00		0.3125	30.953	30.833	3,694.9	23.86	99.05	78.7	230.6	0.0	531.3
50.00		0.3125	30.170	30.044	3,418.6	23.19	96.54	79.4	218.9	0.0	517.9
55.00		0.3125	29.386	29.256	3,156.5	22.52	94.04	80.2	207.5	0.0	504.5
60.00		0.3125	28.603	28.467	2,908.1	21.85	91.53	80.9	196.4	0.0	491.0
65.00		0.3125	27.819	27.679	2,673.1	21.17	89.02	81.6	185.6	0.0	477.6
70.00	Bot - Section 3	0.3125	27.036	26.891	2,451.2	20.50	86.52	81.9	175.1	0.0	464.2
73.50	Top - Section 2	0.2500	26.988	21.524	1,964.0	26.25	107.95	76.1	140.6	0.0	575.9
75.00		0.2500	26.752	21.335	1,912.7	25.99	107.01	76.4	138.1	0.0	109.4
80.00		0.2500	25.969	20.704	1,748.0	25.15	103.88	77.3	130.0	0.0	357.6
85.00		0.2500	25.185	20.073	1,593.1	24.31	100.74	78.2	122.2	0.0	346.9
90.00		0.2500	24.402	19.442	1,447.6	23.47	97.61	79.1	114.6	0.0	336.2
95.00		0.2500	23.618	18.812	1,311.2	22.63	94.47	80.0	107.2	0.0	325.4
100.0		0.2500	22.835	18.181	1,183.7	21.79	91.34	80.9	100.1	0.0	314.7
105.0		0.2500	22.051	17.550	1,064.7	20.96	88.21	81.9	93.3	0.0	304.0
110.0	Top - Section 3	0.2500	21.268	16.919	954.0	20.12	85.07	81.9	86.7	0.0	293.2
110.0	Bot - Section 4	0.1875	21.268	12.727	721.9	27.71	113.43	74.5	65.6	0.0	
113.0		0.1875	20.798	12.444	674.7	27.04	110.92	75.2	62.7	0.0	128.5
115.0		0.1875	20.484	12.254	644.4	26.59	109.25	75.7	60.8	0.0	84.0
120.0		0.1875	19.701	11.781	572.6	25.47	105.07	76.9	56.1	0.0	204.5
125.0		0.1875	18.917	11.308	506.4	24.35	100.89	78.2	51.7	0.0	196.4
130.0		0.1875	18.134	10.835	445.4	23.24	96.71	79.4	47.5	0.0	188.4
135.0		0.1875	17.350	10.362	389.6	22.12	92.54	80.6	43.4	0.0	180.3
140.0		0.1875	16.567	9.889	338.6	21.00	88.36	81.8	39.5	0.0	172.3
145.0		0.1875	15.783	9.416	292.3	19.88	84.18	81.9	35.8	0.0	164.2
150.0		0.1875	15.000	8.943	250.5	18.76	80.00	81.9	32.3	0.0	156.2
											13,372.1

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number:OAA720735_C3_01 1/19/2018 5:17:58 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 93 mph with No Ice 30 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		529.6	0.0					0.0	0.0	529.6	0.0	0.0	0.0
5.00		1,026.8	902.6					110.6	120.7	1,137.4	1,023.3	0.0	0.0
10.00		964.6	883.3					106.1	120.7	1,070.7	1,004.0	0.0	0.0
15.00		907.4	864.0					102.0	253.6	1,009.4	1,117.6	0.0	0.0
20.00		785.7	844.7					98.2	253.6	883.9	1,098.3	0.0	0.0
25.00		671.9	825.4					0.0	253.6	671.9	1,079.0	0.0	0.0
30.00		421.3	806.1					0.0	253.6	421.3	1,059.7	0.0	0.0
31.50	Bot - Section 2	319.9	238.1					0.0	76.1	319.9	314.1	0.0	0.0
35.00		267.4	1,015.8					0.0	177.5	267.4	1,193.3	0.0	0.0
35.67	Top - Section 1	317.2	191.5					0.0	33.8	317.2	225.3	0.0	0.0
40.00		586.1	565.6					0.0	219.8	586.1	785.4	0.0	0.0
45.00		616.3	637.5					0.0	253.6	616.3	891.2	0.0	0.0
50.00		602.5	621.4					0.0	253.6	602.5	875.1	0.0	0.0
55.00		587.8	605.4					0.0	253.6	587.8	859.0	0.0	0.0
60.00		572.5	589.3					0.0	253.6	572.5	842.9	0.0	0.0
65.00		556.7	573.2					0.0	253.6	556.7	826.8	0.0	0.0
70.00	Bot - Section 3	465.2	557.1					0.0	253.6	465.2	810.7	0.0	0.0
73.50	Top - Section 2	271.4	691.1					0.0	177.5	271.4	868.7	0.0	0.0
75.00		343.9	131.3					0.0	76.1	343.9	207.3	0.0	0.0
80.00		518.5	429.1					0.0	253.6	518.5	682.8	0.0	0.0
85.00		502.4	416.3					0.0	253.6	502.4	669.9	0.0	0.0
90.00		486.3	403.4					0.0	253.6	486.3	657.0	0.0	0.0
95.00		470.3	390.5					0.0	253.6	470.3	644.1	0.0	0.0
100.00		454.4	377.6					0.0	253.6	454.4	631.2	0.0	0.0
105.00		438.6	364.8					0.0	253.6	438.6	618.4	0.0	0.0
110.00	Top - Section 3	340.9	351.9					0.0	253.6	340.9	605.5	0.0	0.0
113.00	Appurtenance(s)	207.6	154.2	2,816.2	0.0	2,142.2	1,473.7	0.0	152.2	3,023.8	1,780.1	0.0	0.0
115.00		281.9	100.8					0.0	74.7	281.9	175.6	0.0	0.0
120.00		391.8	245.4					0.0	186.8	391.8	432.1	0.0	0.0
125.00		376.4	235.7					0.0	186.8	376.4	422.5	0.0	0.0
130.00		361.0	226.0					0.0	186.8	361.0	412.8	0.0	0.0
135.00		345.7	216.4					0.0	186.8	345.7	403.2	0.0	0.0
140.00		330.5	206.7					0.0	186.8	330.5	393.5	0.0	0.0
145.00		315.2	197.1					0.0	186.8	315.2	383.9	0.0	0.0
150.00	Appurtenance(s)	153.8	187.4	4,371.4	0.0	7,216.4	3,995.2	0.0	186.8	4,525.2	4,369.4	0.0	0.0
									Totals:	24,394.2	28,363.3	0.00	0.00

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number:OAA720735_C3_01 1/19/2018 5:18:01 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 93 mph with No Ice 30 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	-28.28	-23.96	0.00	-2,179.64	0.00	2,179.64	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.926
5.00	-27.11	-23.00	0.00	-2,059.83	0.00	2,059.83	3,114.35	1,557.18	4,645.51	2,294.24	0.21	-0.39	0.907
10.00	-25.96	-22.10	0.00	-1,944.81	0.00	1,944.81	3,070.50	1,535.25	4,480.02	2,212.51	0.82	-0.77	0.888
15.00	-24.72	-21.24	0.00	-1,834.31	0.00	1,834.31	3,025.61	1,512.81	4,315.90	2,131.46	1.84	-1.17	0.869
20.00	-23.50	-20.50	0.00	-1,728.10	0.00	1,728.10	2,979.68	1,489.84	4,153.25	2,051.14	3.27	-1.56	0.851
25.00	-22.30	-19.95	0.00	-1,625.62	0.00	1,625.62	2,932.71	1,466.36	3,992.19	1,971.59	5.12	-1.96	0.832
30.00	-21.17	-19.58	0.00	-1,525.88	0.00	1,525.88	2,875.21	1,437.61	3,820.20	1,886.65	7.39	-2.36	0.816
31.50	-20.80	-19.33	0.00	-1,496.51	0.00	1,496.51	2,854.29	1,427.15	3,764.49	1,859.14	8.15	-2.49	0.812
35.00	-19.57	-19.06	0.00	-1,428.87	0.00	1,428.87	2,805.48	1,402.74	3,636.10	1,795.73	10.08	-2.77	0.803
35.67	-19.29	-18.80	0.00	-1,416.16	0.00	1,416.16	2,248.07	1,124.03	2,973.91	1,468.70	10.47	-2.83	0.973
40.00	-18.40	-18.31	0.00	-1,334.68	0.00	1,334.68	2,218.59	1,109.29	2,872.23	1,418.49	13.20	-3.18	0.949
45.00	-17.41	-17.78	0.00	-1,243.14	0.00	1,243.14	2,183.60	1,091.80	2,755.77	1,360.97	16.78	-3.64	0.922
50.00	-16.44	-17.25	0.00	-1,154.24	0.00	1,154.24	2,147.58	1,073.79	2,640.30	1,303.95	20.83	-4.10	0.893
55.00	-15.49	-16.73	0.00	-1,067.97	0.00	1,067.97	2,110.52	1,055.26	2,525.94	1,247.47	25.38	-4.57	0.864
60.00	-14.57	-16.21	0.00	-984.33	0.00	984.33	2,072.41	1,036.21	2,412.79	1,191.58	30.40	-5.03	0.833
65.00	-13.67	-15.69	0.00	-903.31	0.00	903.31	2,033.27	1,016.64	2,300.94	1,136.35	35.91	-5.49	0.802
70.00	-12.81	-15.23	0.00	-824.88	0.00	824.88	1,982.10	991.05	2,178.42	1,075.84	41.89	-5.95	0.773
73.50	-11.91	-14.92	0.00	-771.58	0.00	771.58	1,473.96	736.98	1,624.57	802.32	46.37	-6.28	0.970
75.00	-11.66	-14.62	0.00	-749.21	0.00	749.21	1,466.28	733.14	1,601.77	791.05	48.36	-6.42	0.955
80.00	-10.91	-14.13	0.00	-676.11	0.00	676.11	1,440.00	720.00	1,526.12	753.69	55.35	-6.95	0.905
85.00	-10.19	-13.64	0.00	-605.48	0.00	605.48	1,412.68	706.34	1,451.11	716.65	62.88	-7.47	0.852
90.00	-9.49	-13.15	0.00	-537.30	0.00	537.30	1,384.32	692.16	1,376.86	679.98	70.95	-7.98	0.797
95.00	-8.81	-12.67	0.00	-471.55	0.00	471.55	1,354.92	677.46	1,303.45	643.72	79.54	-8.47	0.739
100.00	-8.16	-12.19	0.00	-408.22	0.00	408.22	1,324.47	662.24	1,230.99	607.94	88.64	-8.95	0.678
105.00	-7.53	-11.72	0.00	-347.27	0.00	347.27	1,292.99	646.50	1,159.59	572.68	98.22	-9.40	0.613
110.00	-6.92	-11.32	0.00	-288.70	0.00	288.70	1,247.13	623.57	1,077.81	532.29	108.25	-9.83	0.548
110.00	-6.92	-11.32	0.00	-288.70	0.00	288.70	853.24	426.62	741.78	366.34	108.25	-9.83	0.797
113.00	-5.66	-8.05	0.00	-252.60	0.00	252.60	842.42	421.21	715.90	353.56	114.48	-10.07	0.722
115.00	-5.49	-7.78	0.00	-236.49	0.00	236.49	834.99	417.50	698.71	345.06	118.72	-10.28	0.692
120.00	-5.08	-7.36	0.00	-197.60	0.00	197.60	815.71	407.86	655.98	323.96	129.68	-10.76	0.616
125.00	-4.68	-6.94	0.00	-160.82	0.00	160.82	795.39	397.69	613.71	303.09	141.12	-11.20	0.537
130.00	-4.31	-6.53	0.00	-126.11	0.00	126.11	774.02	387.01	572.00	282.49	152.99	-11.61	0.452
135.00	-3.95	-6.14	0.00	-93.44	0.00	93.44	751.62	375.81	530.94	262.21	165.26	-11.96	0.362
140.00	-3.61	-5.75	0.00	-62.76	0.00	62.76	728.18	364.09	490.64	242.31	177.84	-12.24	0.264
145.00	-3.29	-5.36	0.00	-34.04	0.00	34.04	694.06	347.03	445.03	219.78	190.68	-12.45	0.160
150.00	0.00	-4.53	0.00	-7.22	0.00	7.22	659.19	329.60	401.19	198.13	203.68	-12.55	0.037

Site Number:	302519	Code: ANSI/TIA-222-G	
Site Name:	Southbury, CT	Engineering Number: OAA720735_C3_01	1/19/2018 5:18:01 PM
Customer:	AT&T MOBILITY		

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 30 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		529.6	0.0					0.0	0.0	529.6	0.0	0.0	0.0
5.00		1,026.8	677.0					110.6	90.5	1,137.4	767.5	0.0	0.0
10.00		964.6	662.5					106.1	90.5	1,070.7	753.0	0.0	0.0
15.00		907.4	648.0					102.0	190.2	1,009.4	838.2	0.0	0.0
20.00		785.7	633.5					98.2	190.2	883.9	823.7	0.0	0.0
25.00		671.9	619.0					0.0	190.2	671.9	809.2	0.0	0.0
30.00		421.3	604.5					0.0	190.2	421.3	794.7	0.0	0.0
31.50	Bot - Section 2	319.9	178.5					0.0	57.1	319.9	235.6	0.0	0.0
35.00		267.4	761.9					0.0	133.1	267.4	895.0	0.0	0.0
35.67	Top - Section 1	317.2	143.6					0.0	25.4	317.2	169.0	0.0	0.0
40.00		586.1	424.2					0.0	164.8	586.1	589.0	0.0	0.0
45.00		616.3	478.2					0.0	190.2	616.3	668.4	0.0	0.0
50.00		602.5	466.1					0.0	190.2	602.5	656.3	0.0	0.0
55.00		587.8	454.0					0.0	190.2	587.8	644.2	0.0	0.0
60.00		572.5	441.9					0.0	190.2	572.5	632.2	0.0	0.0
65.00		556.7	429.9					0.0	190.2	556.7	620.1	0.0	0.0
70.00	Bot - Section 3	465.2	417.8					0.0	190.2	465.2	608.0	0.0	0.0
73.50	Top - Section 2	271.4	518.3					0.0	133.1	271.4	651.5	0.0	0.0
75.00		343.9	98.4					0.0	57.1	343.9	155.5	0.0	0.0
80.00		518.5	321.9					0.0	190.2	518.5	512.1	0.0	0.0
85.00		502.4	312.2					0.0	190.2	502.4	502.4	0.0	0.0
90.00		486.3	302.5					0.0	190.2	486.3	492.7	0.0	0.0
95.00		470.3	292.9					0.0	190.2	470.3	483.1	0.0	0.0
100.00		454.4	283.2					0.0	190.2	454.4	473.4	0.0	0.0
105.00		438.6	273.6					0.0	190.2	438.6	463.8	0.0	0.0
110.00	Top - Section 3	340.9	263.9					0.0	190.2	340.9	454.1	0.0	0.0
113.00	Appurtenance(s)	207.6	115.6	2,816.2	0.0	2,142.2	1,105.3	0.0	114.1	3,023.8	1,335.0	0.0	0.0
115.00		281.9	75.6					0.0	56.0	281.9	131.7	0.0	0.0
120.00		391.8	184.0					0.0	140.1	391.8	324.1	0.0	0.0
125.00		376.4	176.8					0.0	140.1	376.4	316.9	0.0	0.0
130.00		361.0	169.5					0.0	140.1	361.0	309.6	0.0	0.0
135.00		345.7	162.3					0.0	140.1	345.7	302.4	0.0	0.0
140.00		330.5	155.0					0.0	140.1	330.5	295.1	0.0	0.0
145.00		315.2	147.8					0.0	140.1	315.2	287.9	0.0	0.0
150.00	Appurtenance(s)	153.8	140.6	4,371.4	0.0	7,216.4	2,996.4	0.0	140.1	4,525.2	3,277.0	0.0	0.0
								Totals:		24,394.2	21,272.4	0.00	0.00

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number: OAA720735_C3_01 1/19/2018 5:18:03 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 30 Iterations

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

Wind Importance 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	-21.19	-23.94	0.00	-2,132.53	0.00	2,132.53	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.904
5.00	-20.28	-22.93	0.00	-2,012.86	0.00	2,012.86	3,114.35	1,557.18	4,645.51	2,294.24	0.20	-0.38	0.884
10.00	-19.39	-21.98	0.00	-1,898.21	0.00	1,898.21	3,070.50	1,535.25	4,480.02	2,212.51	0.80	-0.76	0.864
15.00	-18.43	-21.08	0.00	-1,788.30	0.00	1,788.30	3,025.61	1,512.81	4,315.90	2,131.46	1.80	-1.14	0.845
20.00	-17.49	-20.30	0.00	-1,682.89	0.00	1,682.89	2,979.68	1,489.84	4,153.25	2,051.14	3.20	-1.52	0.827
25.00	-16.57	-19.71	0.00	-1,581.41	0.00	1,581.41	2,932.71	1,466.36	3,992.19	1,971.59	5.00	-1.91	0.808
30.00	-15.70	-19.33	0.00	-1,482.83	0.00	1,482.83	2,875.21	1,437.61	3,820.20	1,886.65	7.21	-2.30	0.792
31.50	-15.41	-19.06	0.00	-1,453.83	0.00	1,453.83	2,854.29	1,427.15	3,764.49	1,859.14	7.95	-2.42	0.788
35.00	-14.48	-18.79	0.00	-1,387.13	0.00	1,387.13	2,805.48	1,402.74	3,636.10	1,795.73	9.83	-2.70	0.778
35.67	-14.26	-18.52	0.00	-1,374.60	0.00	1,374.60	2,248.07	1,124.03	2,973.91	1,468.70	10.21	-2.76	0.943
40.00	-13.58	-18.00	0.00	-1,294.35	0.00	1,294.35	2,218.59	1,109.29	2,872.23	1,418.49	12.87	-3.10	0.919
45.00	-12.81	-17.44	0.00	-1,204.37	0.00	1,204.37	2,183.60	1,091.80	2,755.77	1,360.97	16.36	-3.55	0.891
50.00	-12.06	-16.89	0.00	-1,117.15	0.00	1,117.15	2,147.58	1,073.79	2,640.30	1,303.95	20.31	-3.99	0.863
55.00	-11.34	-16.35	0.00	-1,032.68	0.00	1,032.68	2,110.52	1,055.26	2,525.94	1,247.47	24.72	-4.44	0.833
60.00	-10.63	-15.81	0.00	-950.94	0.00	950.94	2,072.41	1,036.21	2,412.79	1,191.58	29.61	-4.89	0.803
65.00	-9.94	-15.28	0.00	-871.89	0.00	871.89	2,033.27	1,016.64	2,300.94	1,136.35	34.96	-5.33	0.772
70.00	-9.29	-14.82	0.00	-795.50	0.00	795.50	1,982.10	991.05	2,178.42	1,075.84	40.77	-5.78	0.744
73.50	-8.61	-14.51	0.00	-743.64	0.00	743.64	1,473.96	736.98	1,624.57	802.32	45.11	-6.09	0.933
75.00	-8.41	-14.20	0.00	-721.87	0.00	721.87	1,466.28	733.14	1,601.77	791.05	47.04	-6.22	0.919
80.00	-7.84	-13.70	0.00	-650.85	0.00	650.85	1,440.00	720.00	1,526.12	753.69	53.82	-6.74	0.869
85.00	-7.29	-13.20	0.00	-582.34	0.00	582.34	1,412.68	706.34	1,451.11	716.65	61.13	-7.24	0.818
90.00	-6.76	-12.72	0.00	-516.32	0.00	516.32	1,384.32	692.16	1,376.86	679.98	68.95	-7.73	0.765
95.00	-6.24	-12.23	0.00	-452.75	0.00	452.75	1,354.92	677.46	1,303.45	643.72	77.27	-8.20	0.708
100.00	-5.75	-11.76	0.00	-391.58	0.00	391.58	1,324.47	662.24	1,230.99	607.94	86.08	-8.66	0.649
105.00	-5.28	-11.29	0.00	-332.78	0.00	332.78	1,292.99	646.50	1,159.59	572.68	95.35	-9.10	0.585
110.00	-4.82	-10.91	0.00	-276.30	0.00	276.30	1,247.13	623.57	1,077.81	532.29	105.05	-9.50	0.523
110.00	-4.82	-10.91	0.00	-276.30	0.00	276.30	853.24	426.62	741.78	366.34	105.05	-9.50	0.761
113.00	-3.98	-7.72	0.00	-241.43	0.00	241.43	842.42	421.21	715.90	353.56	111.07	-9.74	0.688
115.00	-3.86	-7.44	0.00	-225.98	0.00	225.98	834.99	417.50	698.71	345.06	115.17	-9.93	0.660
120.00	-3.56	-7.03	0.00	-188.76	0.00	188.76	815.71	407.86	655.98	323.96	125.77	-10.39	0.587
125.00	-3.27	-6.62	0.00	-153.62	0.00	153.62	795.39	397.69	613.71	303.09	136.82	-10.82	0.511
130.00	-2.99	-6.23	0.00	-120.50	0.00	120.50	774.02	387.01	572.00	282.49	148.29	-11.20	0.431
135.00	-2.73	-5.85	0.00	-89.35	0.00	89.35	751.62	375.81	530.94	262.21	160.13	-11.54	0.345
140.00	-2.49	-5.47	0.00	-60.13	0.00	60.13	728.18	364.09	490.64	242.31	172.28	-11.81	0.252
145.00	-2.26	-5.11	0.00	-32.77	0.00	32.77	694.06	347.03	445.03	219.78	184.67	-12.00	0.153
150.00	0.00	-4.53	0.00	-7.22	0.00	7.22	659.19	329.60	401.19	198.13	197.21	-12.10	0.037

Site Number:	302519	Code: ANSI/TIA-222-G	
Site Name:	Southbury, CT	Engineering Number: OAA720735_C3_01	1/19/2018 5:18:04 PM
Customer:	AT&T MOBILITY		

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 Iterations

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

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		103.2	0.0					0.0	0.0	103.2	0.0	0.0	0.0
5.00		201.0	1,275.4					55.1	203.8	256.1	1,479.2	0.0	0.0
10.00		190.2	1,286.5					54.3	212.6	244.4	1,499.1	0.0	0.0
15.00		179.7	1,274.3					52.7	349.3	232.4	1,623.6	0.0	0.0
20.00		169.9	1,254.9					51.1	351.4	220.9	1,606.3	0.0	0.0
25.00		160.7	1,231.9					0.0	293.3	160.7	1,525.2	0.0	0.0
30.00		101.0	1,206.9					0.0	253.6	101.0	1,460.5	0.0	0.0
31.50	Bot - Section 2	76.7	358.0					0.0	76.1	76.7	434.0	0.0	0.0
35.00		64.2	1,296.8					0.0	177.5	64.2	1,474.4	0.0	0.0
35.67	Top - Section 1	76.3	245.0					0.0	33.8	76.3	278.8	0.0	0.0
40.00		141.1	906.6					0.0	219.8	141.1	1,126.4	0.0	0.0
45.00		148.8	1,022.7					0.0	253.6	148.8	1,276.3	0.0	0.0
50.00		145.8	997.9					0.0	253.6	145.8	1,251.5	0.0	0.0
55.00		142.7	972.9					0.0	253.6	142.7	1,226.5	0.0	0.0
60.00		139.4	947.7					0.0	253.6	139.4	1,201.3	0.0	0.0
65.00		136.0	922.3					0.0	253.6	136.0	1,176.0	0.0	0.0
70.00	Bot - Section 3	113.8	897.0					0.0	253.6	113.8	1,150.6	0.0	0.0
73.50	Top - Section 2	66.4	928.6					0.0	177.5	66.4	1,106.1	0.0	0.0
75.00		84.4	232.2					0.0	76.1	84.4	308.3	0.0	0.0
80.00		127.6	756.2					0.0	253.6	127.6	1,009.9	0.0	0.0
85.00		124.1	734.0					0.0	253.6	124.1	987.6	0.0	0.0
90.00		120.6	711.8					0.0	253.6	120.6	965.4	0.0	0.0
95.00		117.1	689.6					0.0	253.6	117.1	943.2	0.0	0.0
100.00		113.7	667.4					0.0	253.6	113.7	921.0	0.0	0.0
105.00		110.2	645.2					0.0	253.6	110.2	898.8	0.0	0.0
110.00	Top - Section 3	86.0	623.1					0.0	253.6	86.0	876.7	0.0	0.0
113.00	Appurtenance(s)	52.6	313.6	697.6	0.0	467.8	4,195.8	0.0	152.2	750.1	4,661.5	0.0	0.0
115.00		71.7	205.6					0.0	74.7	71.7	280.3	0.0	0.0
120.00		100.1	498.1					0.0	186.8	100.1	684.9	0.0	0.0
125.00		96.7	479.2					0.0	186.8	96.7	666.0	0.0	0.0
130.00		93.4	460.4					0.0	186.8	93.4	647.2	0.0	0.0
135.00		90.1	441.6					0.0	186.8	90.1	628.3	0.0	0.0
140.00		86.8	422.7					0.0	186.8	86.8	609.5	0.0	0.0
145.00		83.6	403.9					0.0	186.8	83.6	590.7	0.0	0.0
150.00	Appurtenance(s)	41.0	385.1	1,047.2	0.0	1,525.2	8,146.7	0.0	186.8	1,088.1	8,718.6	0.0	0.0
								Totals:		5,914.51	45,293.7	0.00	0.00

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number: OAA720735_C3_01 1/19/2018 5:18:06 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 Iterations

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

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

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	-45.29	-5.85	0.00	-584.86	0.00	584.86	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.260
5.00	-43.80	-5.67	0.00	-555.60	0.00	555.60	3,114.35	1,557.18	4,645.51	2,294.24	0.06	-0.10	0.256
10.00	-42.29	-5.50	0.00	-527.23	0.00	527.23	3,070.50	1,535.25	4,480.02	2,212.51	0.22	-0.21	0.252
15.00	-40.66	-5.34	0.00	-499.71	0.00	499.71	3,025.61	1,512.81	4,315.90	2,131.46	0.50	-0.32	0.248
20.00	-39.04	-5.18	0.00	-473.00	0.00	473.00	2,979.68	1,489.84	4,153.25	2,051.14	0.88	-0.42	0.244
25.00	-37.51	-5.08	0.00	-447.09	0.00	447.09	2,932.71	1,466.36	3,992.19	1,971.59	1.39	-0.53	0.240
30.00	-36.04	-5.01	0.00	-421.68	0.00	421.68	2,875.21	1,437.61	3,820.20	1,886.65	2.00	-0.64	0.236
31.50	-35.61	-4.97	0.00	-414.16	0.00	414.16	2,854.29	1,427.15	3,764.49	1,859.14	2.21	-0.68	0.235
35.00	-34.13	-4.91	0.00	-396.78	0.00	396.78	2,805.48	1,402.74	3,636.10	1,795.73	2.74	-0.76	0.233
35.67	-33.85	-4.86	0.00	-393.51	0.00	393.51	2,248.07	1,124.03	2,973.91	1,468.70	2.84	-0.77	0.283
40.00	-32.71	-4.77	0.00	-372.43	0.00	372.43	2,218.59	1,109.29	2,872.23	1,418.49	3.59	-0.87	0.277
45.00	-31.43	-4.67	0.00	-348.57	0.00	348.57	2,183.60	1,091.80	2,755.77	1,360.97	4.57	-1.00	0.271
50.00	-30.17	-4.57	0.00	-325.20	0.00	325.20	2,147.58	1,073.79	2,640.30	1,303.95	5.69	-1.13	0.263
55.00	-28.94	-4.47	0.00	-302.34	0.00	302.34	2,110.52	1,055.26	2,525.94	1,247.47	6.94	-1.26	0.256
60.00	-27.73	-4.37	0.00	-279.98	0.00	279.98	2,072.41	1,036.21	2,412.79	1,191.58	8.33	-1.39	0.248
65.00	-26.55	-4.26	0.00	-258.15	0.00	258.15	2,033.27	1,016.64	2,300.94	1,136.35	9.86	-1.52	0.240
70.00	-25.39	-4.17	0.00	-236.83	0.00	236.83	1,982.10	991.05	2,178.42	1,075.84	11.52	-1.65	0.233
73.50	-24.28	-4.10	0.00	-222.25	0.00	222.25	1,473.96	736.98	1,624.57	802.32	12.77	-1.75	0.294
75.00	-23.97	-4.04	0.00	-216.11	0.00	216.11	1,466.28	733.14	1,601.77	791.05	13.33	-1.79	0.290
80.00	-22.96	-3.94	0.00	-195.89	0.00	195.89	1,440.00	720.00	1,526.12	753.69	15.28	-1.94	0.276
85.00	-21.96	-3.84	0.00	-176.18	0.00	176.18	1,412.68	706.34	1,451.11	716.65	17.40	-2.09	0.261
90.00	-20.99	-3.74	0.00	-156.97	0.00	156.97	1,384.32	692.16	1,376.86	679.98	19.67	-2.24	0.246
95.00	-20.05	-3.63	0.00	-138.27	0.00	138.27	1,354.92	677.46	1,303.45	643.72	22.09	-2.39	0.230
100.00	-19.12	-3.53	0.00	-120.11	0.00	120.11	1,324.47	662.24	1,230.99	607.94	24.67	-2.53	0.212
105.00	-18.22	-3.42	0.00	-102.47	0.00	102.47	1,292.99	646.50	1,159.59	572.68	27.39	-2.66	0.193
110.00	-17.34	-3.32	0.00	-85.39	0.00	85.39	1,247.13	623.57	1,077.81	532.29	30.24	-2.79	0.174
110.00	-17.34	-3.32	0.00	-85.39	0.00	85.39	853.24	426.62	741.78	366.34	30.24	-2.79	0.253
113.00	-12.72	-2.35	0.00	-74.97	0.00	74.97	842.42	421.21	715.90	353.56	32.01	-2.86	0.227
115.00	-12.44	-2.29	0.00	-70.26	0.00	70.26	834.99	417.50	698.71	345.06	33.22	-2.92	0.219
120.00	-11.76	-2.18	0.00	-58.80	0.00	58.80	815.71	407.86	655.98	323.96	36.36	-3.06	0.196
125.00	-11.09	-2.08	0.00	-47.88	0.00	47.88	795.39	397.69	613.71	303.09	39.63	-3.19	0.172
130.00	-10.45	-1.97	0.00	-37.50	0.00	37.50	774.02	387.01	572.00	282.49	43.04	-3.31	0.146
135.00	-9.82	-1.86	0.00	-27.67	0.00	27.67	751.62	375.81	530.94	262.21	46.57	-3.42	0.119
140.00	-9.22	-1.74	0.00	-18.39	0.00	18.39	728.18	364.09	490.64	242.31	50.20	-3.50	0.089
145.00	-8.63	-1.63	0.00	-9.68	0.00	9.68	694.06	347.03	445.03	219.78	53.90	-3.56	0.056
150.00	0.00	-1.09	0.00	-1.53	0.00	1.53	659.19	329.60	401.19	198.13	57.64	-3.59	0.008

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number: OAA720735_C3_01 1/19/2018 5:18:06 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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		137.8	0.0					0.0	0.0	137.8	0.0	0.0	0.0
5.00		267.1	752.2					37.7	100.6	304.8	852.7	0.0	0.0
10.00		250.9	736.1					36.9	100.6	287.8	836.6	0.0	0.0
15.00		236.1	720.0					36.2	211.3	272.2	931.3	0.0	0.0
20.00		204.4	703.9					35.5	211.3	239.9	915.2	0.0	0.0
25.00		174.8	687.8					0.0	211.3	174.8	899.2	0.0	0.0
30.00		109.6	671.7					0.0	211.3	109.6	883.1	0.0	0.0
31.50	Bot - Section 2	83.2	198.4					0.0	63.4	83.2	261.8	0.0	0.0
35.00		69.6	846.5					0.0	147.9	69.6	994.4	0.0	0.0
35.67	Top - Section 1	82.5	159.6					0.0	28.2	82.5	187.8	0.0	0.0
40.00		152.5	471.3					0.0	183.2	152.5	654.5	0.0	0.0
45.00		160.3	531.3					0.0	211.3	160.3	742.6	0.0	0.0
50.00		156.7	517.9					0.0	211.3	156.7	729.2	0.0	0.0
55.00		152.9	504.5					0.0	211.3	152.9	715.8	0.0	0.0
60.00		148.9	491.0					0.0	211.3	148.9	702.4	0.0	0.0
65.00		144.8	477.6					0.0	211.3	144.8	689.0	0.0	0.0
70.00	Bot - Section 3	121.0	464.2					0.0	211.3	121.0	675.6	0.0	0.0
73.50	Top - Section 2	70.6	575.9					0.0	147.9	70.6	723.9	0.0	0.0
75.00		89.5	109.4					0.0	63.4	89.5	172.8	0.0	0.0
80.00		134.9	357.6					0.0	211.3	134.9	569.0	0.0	0.0
85.00		130.7	346.9					0.0	211.3	130.7	558.2	0.0	0.0
90.00		126.5	336.2					0.0	211.3	126.5	547.5	0.0	0.0
95.00		122.4	325.4					0.0	211.3	122.4	536.8	0.0	0.0
100.00		118.2	314.7					0.0	211.3	118.2	526.0	0.0	0.0
105.00		114.1	304.0					0.0	211.3	114.1	515.3	0.0	0.0
110.00	Top - Section 3	88.7	293.2					0.0	211.3	88.7	504.6	0.0	0.0
113.00	Appurtenance(s)	54.0	128.5	732.6	0.0	557.3	1,228.1	0.0	126.8	786.6	1,483.4	0.0	0.0
115.00		73.3	84.0					0.0	62.3	73.3	146.3	0.0	0.0
120.00		101.9	204.5					0.0	155.7	101.9	360.1	0.0	0.0
125.00		97.9	196.4					0.0	155.7	97.9	352.1	0.0	0.0
130.00		93.9	188.4					0.0	155.7	93.9	344.0	0.0	0.0
135.00		89.9	180.3					0.0	155.7	89.9	336.0	0.0	0.0
140.00		86.0	172.3					0.0	155.7	86.0	327.9	0.0	0.0
145.00		82.0	164.2					0.0	155.7	82.0	319.9	0.0	0.0
150.00	Appurtenance(s)	40.0	156.2	1,137.2	0.0	1,877.3	3,329.3	0.0	155.7	1,177.2	3,641.1	0.0	0.0
								Totals:		6,383.82	23,636.1	0.00	0.00

Site Number: 302519 Code: ANSI/TIA-222-G

Site Name: Southbury, CT Engineering Number: OAA720735_C3_01 1/19/2018 5:18:09 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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	-23.63	-6.27	0.00	-562.20	0.00	562.20	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.244
5.00	-22.77	-6.00	0.00	-530.87	0.00	530.87	3,114.35	1,557.18	4,645.51	2,294.24	0.05	-0.10	0.239
10.00	-21.92	-5.75	0.00	-500.87	0.00	500.87	3,070.50	1,535.25	4,480.02	2,212.51	0.21	-0.20	0.234
15.00	-20.98	-5.51	0.00	-472.13	0.00	472.13	3,025.61	1,512.81	4,315.90	2,131.46	0.47	-0.30	0.228
20.00	-20.06	-5.30	0.00	-444.58	0.00	444.58	2,979.68	1,489.84	4,153.25	2,051.14	0.84	-0.40	0.223
25.00	-19.15	-5.15	0.00	-418.08	0.00	418.08	2,932.71	1,466.36	3,992.19	1,971.59	1.32	-0.50	0.219
30.00	-18.26	-5.06	0.00	-392.32	0.00	392.32	2,875.21	1,437.61	3,820.20	1,886.65	1.90	-0.61	0.214
31.50	-18.00	-4.99	0.00	-384.73	0.00	384.73	2,854.29	1,427.15	3,764.49	1,859.14	2.10	-0.64	0.213
35.00	-17.00	-4.92	0.00	-367.28	0.00	367.28	2,805.48	1,402.74	3,636.10	1,795.73	2.60	-0.71	0.211
35.67	-16.81	-4.85	0.00	-364.00	0.00	364.00	2,248.07	1,124.03	2,973.91	1,468.70	2.70	-0.73	0.255
40.00	-16.15	-4.72	0.00	-342.99	0.00	342.99	2,218.59	1,109.29	2,872.23	1,418.49	3.40	-0.82	0.249
45.00	-15.40	-4.58	0.00	-319.41	0.00	319.41	2,183.60	1,091.80	2,755.77	1,360.97	4.32	-0.94	0.242
50.00	-14.66	-4.44	0.00	-296.53	0.00	296.53	2,147.58	1,073.79	2,640.30	1,303.95	5.37	-1.06	0.234
55.00	-13.94	-4.30	0.00	-274.34	0.00	274.34	2,110.52	1,055.26	2,525.94	1,247.47	6.53	-1.17	0.227
60.00	-13.23	-4.16	0.00	-252.84	0.00	252.84	2,072.41	1,036.21	2,412.79	1,191.58	7.83	-1.29	0.219
65.00	-12.54	-4.03	0.00	-232.02	0.00	232.02	2,033.27	1,016.64	2,300.94	1,136.35	9.25	-1.41	0.210
70.00	-11.86	-3.91	0.00	-211.88	0.00	211.88	1,982.10	991.05	2,178.42	1,075.84	10.79	-1.53	0.203
73.50	-11.14	-3.83	0.00	-198.19	0.00	198.19	1,473.96	736.98	1,624.57	802.32	11.94	-1.61	0.255
75.00	-10.96	-3.75	0.00	-192.44	0.00	192.44	1,466.28	733.14	1,601.77	791.05	12.45	-1.65	0.251
80.00	-10.39	-3.63	0.00	-173.67	0.00	173.67	1,440.00	720.00	1,526.12	753.69	14.25	-1.79	0.238
85.00	-9.83	-3.50	0.00	-155.54	0.00	155.54	1,412.68	706.34	1,451.11	716.65	16.20	-1.92	0.224
90.00	-9.28	-3.38	0.00	-138.03	0.00	138.03	1,384.32	692.16	1,376.86	679.98	18.28	-2.05	0.210
95.00	-8.74	-3.25	0.00	-121.15	0.00	121.15	1,354.92	677.46	1,303.45	643.72	20.49	-2.18	0.195
100.00	-8.21	-3.13	0.00	-104.88	0.00	104.88	1,324.47	662.24	1,230.99	607.94	22.84	-2.30	0.179
105.00	-7.69	-3.01	0.00	-89.22	0.00	89.22	1,292.99	646.50	1,159.59	572.68	25.31	-2.42	0.162
110.00	-7.19	-2.91	0.00	-74.16	0.00	74.16	1,247.13	623.57	1,077.81	532.29	27.90	-2.53	0.145
110.00	-7.19	-2.91	0.00	-74.16	0.00	74.16	853.24	426.62	741.78	366.34	27.90	-2.53	0.211
113.00	-5.74	-2.07	0.00	-64.87	0.00	64.87	842.42	421.21	715.90	353.56	29.51	-2.59	0.190
115.00	-5.59	-1.99	0.00	-60.74	0.00	60.74	834.99	417.50	698.71	345.06	30.60	-2.64	0.183
120.00	-5.23	-1.89	0.00	-50.76	0.00	50.76	815.71	407.86	655.98	323.96	33.44	-2.77	0.163
125.00	-4.88	-1.78	0.00	-41.33	0.00	41.33	795.39	397.69	613.71	303.09	36.39	-2.88	0.143
130.00	-4.54	-1.68	0.00	-32.42	0.00	32.42	774.02	387.01	572.00	282.49	39.46	-2.98	0.121
135.00	-4.21	-1.58	0.00	-24.04	0.00	24.04	751.62	375.81	530.94	262.21	42.64	-3.07	0.097
140.00	-3.89	-1.48	0.00	-16.16	0.00	16.16	728.18	364.09	490.64	242.31	45.89	-3.15	0.072
145.00	-3.57	-1.38	0.00	-8.77	0.00	8.77	694.06	347.03	445.03	219.78	49.22	-3.20	0.045
150.00	0.00	-1.18	0.00	-1.88	0.00	1.88	659.19	329.60	401.19	198.13	52.58	-3.22	0.009

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.20	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	3.33	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	23.64	k
Seismic Base Shear (E):	0.92	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)
34	147.50	312	6,784	0.036	33	388
33	142.50	320	6,496	0.034	31	398
32	137.50	328	6,200	0.032	30	408
31	132.50	336	5,898	0.031	28	418
30	127.50	344	5,593	0.029	27	428
29	122.50	352	5,283	0.028	25	438
28	117.50	360	4,972	0.026	24	448
27	114.00	146	1,901	0.010	9	182
26	111.50	255	3,174	0.017	15	317
25	107.50	505	5,831	0.031	28	627
24	102.50	515	5,414	0.028	26	640
23	97.50	526	5,001	0.026	24	654
22	92.50	537	4,593	0.024	22	667
21	87.50	547	4,192	0.022	20	680
20	82.50	558	3,799	0.020	18	694
19	77.50	569	3,417	0.018	16	707
18	74.25	173	953	0.005	5	215
17	71.75	724	3,727	0.020	18	900
16	67.50	676	3,078	0.016	15	840
15	62.50	689	2,691	0.014	13	856
14	57.50	702	2,322	0.012	11	873
13	52.50	716	1,973	0.010	10	890
12	47.50	729	1,645	0.009	8	906

11	42.50	743	1,341	0.007	6	923
10	37.83	654	937	0.005	5	813
9	35.33	188	234	0.001	1	233
8	33.25	994	1,099	0.006	5	1,236
7	30.75	262	248	0.001	1	325
6	27.50	883	668	0.003	3	1,097
5	22.50	899	455	0.002	2	1,117
4	17.50	915	280	0.001	1	1,137
3	12.50	931	146	0.001	1	1,157
2	7.50	837	47	0.000	0	1,040
1	2.50	853	5	0.000	0	1,060
Powerwave Allgon 702	150.00	13	297	0.002	1	16
Kaelus DBC0061F1V51-	150.00	76	1,715	0.009	8	95
Powerwave TT19-08BP1	150.00	96	2,160	0.011	10	119
Raycap DC6-48-60-18-	150.00	32	715	0.004	3	40
Raycap DC6-48-60-18-	150.00	32	715	0.004	3	40
Ericsson RRUS 11 (Ba	150.00	165	3,713	0.019	18	205
Ericsson RRUS 32 B2	150.00	159	3,577	0.019	17	198
Ericsson RRUS 32 (55	150.00	165	3,719	0.019	18	205
Powerwave Allgon 777	150.00	105	2,363	0.012	11	130
Quintel QS66512-2	150.00	333	7,493	0.039	36	414
CCI HPA-65R-BUU-H6	150.00	153	3,443	0.018	17	190
Flat Platform w/ Han	150.00	2,000	45,000	0.236	217	2,485
RFS FD9R6004/1C-3L	113.00	19	238	0.001	1	23
Alcatel-Lucent RRH2x	113.00	132	1,686	0.009	8	164
Decibel 932DG90T2E-M	113.00	29	364	0.002	2	35
RFS DB-T1-6Z-8AB-0Z	113.00	44	562	0.003	3	55
Andrew HBX-6517DS-VT	113.00	40	506	0.003	2	49
Powerwave Allgon P65	113.00	99	1,264	0.007	6	123
Andrew LNX-6514DS-VT	113.00	116	1,486	0.008	7	145
Round T-Arms	113.00	750	9,577	0.050	46	932
		23,636	190,988	1.000	922	29,372

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)
34	147.50	312	6,784	0.036	33	267
33	142.50	320	6,496	0.034	31	274
32	137.50	328	6,200	0.032	30	281
31	132.50	336	5,898	0.031	28	288
30	127.50	344	5,593	0.029	27	295
29	122.50	352	5,283	0.028	25	302
28	117.50	360	4,972	0.026	24	309
27	114.00	146	1,901	0.010	9	125
26	111.50	255	3,174	0.017	15	219
25	107.50	505	5,831	0.031	28	433
24	102.50	515	5,414	0.028	26	442
23	97.50	526	5,001	0.026	24	451
22	92.50	537	4,593	0.024	22	460
21	87.50	547	4,192	0.022	20	469
20	82.50	558	3,799	0.020	18	479
19	77.50	569	3,417	0.018	16	488
18	74.25	173	953	0.005	5	148
17	71.75	724	3,727	0.020	18	621
16	67.50	676	3,078	0.016	15	579
15	62.50	689	2,691	0.014	13	591
14	57.50	702	2,322	0.012	11	602
13	52.50	716	1,973	0.010	10	614
12	47.50	729	1,645	0.009	8	625

11	42.50	743	1,341	0.007	6	637
10	37.83	654	937	0.005	5	561
9	35.33	188	234	0.001	1	161
8	33.25	994	1,099	0.006	5	853
7	30.75	262	248	0.001	1	224
6	27.50	883	668	0.003	3	757
5	22.50	899	455	0.002	2	771
4	17.50	915	280	0.001	1	785
3	12.50	931	146	0.001	1	798
2	7.50	837	47	0.000	0	717
1	2.50	853	5	0.000	0	731
Powerwave Allgon 702	150.00	13	297	0.002	1	11
Kaelus DBC0061F1V51-	150.00	76	1,715	0.009	8	65
Powerwave TT19-08BP1	150.00	96	2,160	0.011	10	82
Raycap DC6-48-60-18-	150.00	32	715	0.004	3	27
Raycap DC6-48-60-18-	150.00	32	715	0.004	3	27
Ericsson RRUS 11 (Ba	150.00	165	3,713	0.019	18	141
Ericsson RRUS 32 B2	150.00	159	3,577	0.019	17	136
Ericsson RRUS 32 (55	150.00	165	3,719	0.019	18	142
Powerwave Allgon 777	150.00	105	2,363	0.012	11	90
Quintel QS66512-2	150.00	333	7,493	0.039	36	285
CCI HPA-65R-BUU-H6	150.00	153	3,443	0.018	17	131
Flat Platform w/ Han	150.00	2,000	45,000	0.236	217	1,715
RFS FD9R6004/1C-3L	113.00	19	238	0.001	1	16
Alcatel-Lucent RRH2x	113.00	132	1,686	0.009	8	113
Decibel 932DG90T2E-M	113.00	29	364	0.002	2	24
RFS DB-T1-6Z-8AB-0Z	113.00	44	562	0.003	3	38
Andrew HBX-6517DS-VT	113.00	40	506	0.003	2	34
Powerwave Allgon P65	113.00	99	1,264	0.007	6	85
Andrew LNX-6514DS-VT	113.00	116	1,486	0.008	7	100
Round T-Arms	113.00	750	9,577	0.050	46	643
		23,636	190,988	1.000	922	20,264

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	-28.31	-0.93	0.00	-122.32	0.00	122.32	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.060
5.00	-27.27	-0.94	0.00	-117.68	0.00	117.68	3,114.35	1,557.18	4,645.51	2,294.24	0.01	-0.02	0.060
10.00	-26.11	-0.95	0.00	-113.00	0.00	113.00	3,070.50	1,535.25	4,480.02	2,212.51	0.05	-0.04	0.060
15.00	-24.98	-0.95	0.00	-108.27	0.00	108.27	3,025.61	1,512.81	4,315.90	2,131.46	0.10	-0.07	0.059
20.00	-23.86	-0.96	0.00	-103.50	0.00	103.50	2,979.68	1,489.84	4,153.25	2,051.14	0.19	-0.09	0.058
25.00	-22.76	-0.96	0.00	-98.70	0.00	98.70	2,932.71	1,466.36	3,992.19	1,971.59	0.30	-0.11	0.058
30.00	-22.44	-0.97	0.00	-93.88	0.00	93.88	2,875.21	1,437.61	3,820.20	1,886.65	0.43	-0.14	0.058
31.50	-21.20	-0.96	0.00	-92.43	0.00	92.43	2,854.29	1,427.15	3,764.49	1,859.14	0.47	-0.15	0.057
35.00	-20.97	-0.97	0.00	-89.05	0.00	89.05	2,805.48	1,402.74	3,636.10	1,795.73	0.59	-0.16	0.057
35.67	-20.15	-0.96	0.00	-88.41	0.00	88.41	2,248.07	1,124.03	2,973.91	1,468.70	0.61	-0.17	0.069
40.00	-19.23	-0.96	0.00	-84.23	0.00	84.23	2,218.59	1,109.29	2,872.23	1,418.49	0.77	-0.19	0.068
45.00	-18.32	-0.96	0.00	-79.41	0.00	79.41	2,183.60	1,091.80	2,755.77	1,360.97	0.99	-0.22	0.067
50.00	-17.43	-0.96	0.00	-74.60	0.00	74.60	2,147.58	1,073.79	2,640.30	1,303.95	1.23	-0.25	0.065
55.00	-16.56	-0.95	0.00	-69.81	0.00	69.81	2,110.52	1,055.26	2,525.94	1,247.47	1.51	-0.28	0.064
60.00	-15.70	-0.94	0.00	-65.05	0.00	65.05	2,072.41	1,036.21	2,412.79	1,191.58	1.82	-0.31	0.062
65.00	-14.86	-0.93	0.00	-60.34	0.00	60.34	2,033.27	1,016.64	2,300.94	1,136.35	2.16	-0.34	0.060
70.00	-13.96	-0.91	0.00	-55.68	0.00	55.68	1,982.10	991.05	2,178.42	1,075.84	2.53	-0.37	0.059
73.50	-13.75	-0.91	0.00	-52.49	0.00	52.49	1,473.96	736.98	1,624.57	802.32	2.81	-0.39	0.075
75.00	-13.04	-0.90	0.00	-51.12	0.00	51.12	1,466.28	733.14	1,601.77	791.05	2.94	-0.40	0.074
80.00	-12.35	-0.88	0.00	-46.64	0.00	46.64	1,440.00	720.00	1,526.12	753.69	3.38	-0.44	0.070
85.00	-11.67	-0.86	0.00	-42.24	0.00	42.24	1,412.68	706.34	1,451.11	716.65	3.86	-0.48	0.067
90.00	-11.00	-0.84	0.00	-37.94	0.00	37.94	1,384.32	692.16	1,376.86	679.98	4.38	-0.51	0.064
95.00	-10.34	-0.82	0.00	-33.74	0.00	33.74	1,354.92	677.46	1,303.45	643.72	4.93	-0.55	0.060
100.00	-9.70	-0.79	0.00	-29.65	0.00	29.65	1,324.47	662.24	1,230.99	607.94	5.52	-0.58	0.056
105.00	-9.08	-0.76	0.00	-25.70	0.00	25.70	1,292.99	646.50	1,159.59	572.68	6.15	-0.61	0.052
110.00	-8.76	-0.75	0.00	-21.90	0.00	21.90	1,247.13	623.57	1,077.81	532.29	6.81	-0.65	0.048
110.00	-8.76	-0.75	0.00	-21.90	0.00	21.90	853.24	426.62	741.78	366.34	6.81	-0.65	0.070
113.00	-7.05	-0.64	0.00	-19.67	0.00	19.67	842.42	421.21	715.90	353.56	7.22	-0.66	0.064
115.00	-6.61	-0.62	0.00	-18.38	0.00	18.38	834.99	417.50	698.71	345.06	7.50	-0.68	0.061
120.00	-6.17	-0.59	0.00	-15.30	0.00	15.30	815.71	407.86	655.98	323.96	8.23	-0.72	0.055
125.00	-5.74	-0.56	0.00	-12.35	0.00	12.35	795.39	397.69	613.71	303.09	9.01	-0.75	0.048
130.00	-5.32	-0.53	0.00	-9.54	0.00	9.54	774.02	387.01	572.00	282.49	9.81	-0.78	0.041
135.00	-4.92	-0.50	0.00	-6.89	0.00	6.89	751.62	375.81	530.94	262.21	10.64	-0.81	0.033
140.00	-4.52	-0.46	0.00	-4.41	0.00	4.41	728.18	364.09	490.64	242.31	11.50	-0.83	0.024
145.00	-4.13	-0.42	0.00	-2.11	0.00	2.11	694.06	347.03	445.03	219.78	12.38	-0.84	0.016
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	13.27	-0.85	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.53	-0.92	0.00	-118.59	0.00	118.59	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.056
5.00	-18.82	-0.93	0.00	-113.96	0.00	113.96	3,114.35	1,557.18	4,645.51	2,294.24	0.01	-0.02	0.056
10.00	-18.02	-0.94	0.00	-109.31	0.00	109.31	3,070.50	1,535.25	4,480.02	2,212.51	0.04	-0.04	0.055
15.00	-17.23	-0.94	0.00	-104.62	0.00	104.62	3,025.61	1,512.81	4,315.90	2,131.46	0.10	-0.07	0.055
20.00	-16.46	-0.94	0.00	-99.92	0.00	99.92	2,979.68	1,489.84	4,153.25	2,051.14	0.18	-0.09	0.054
25.00	-15.70	-0.95	0.00	-95.19	0.00	95.19	2,932.71	1,466.36	3,992.19	1,971.59	0.29	-0.11	0.054
30.00	-15.48	-0.95	0.00	-90.46	0.00	90.46	2,875.21	1,437.61	3,820.20	1,886.65	0.41	-0.13	0.053
31.50	-14.63	-0.95	0.00	-89.03	0.00	89.03	2,854.29	1,427.15	3,764.49	1,859.14	0.46	-0.14	0.053
35.00	-14.46	-0.95	0.00	-85.73	0.00	85.73	2,805.48	1,402.74	3,636.10	1,795.73	0.57	-0.16	0.053
35.67	-13.90	-0.94	0.00	-85.10	0.00	85.10	2,248.07	1,124.03	2,973.91	1,468.70	0.59	-0.16	0.064
40.00	-13.27	-0.94	0.00	-81.01	0.00	81.01	2,218.59	1,109.29	2,872.23	1,418.49	0.75	-0.18	0.063
45.00	-12.64	-0.94	0.00	-76.31	0.00	76.31	2,183.60	1,091.80	2,755.77	1,360.97	0.96	-0.21	0.062
50.00	-12.03	-0.93	0.00	-71.63	0.00	71.63	2,147.58	1,073.79	2,640.30	1,303.95	1.19	-0.24	0.061
55.00	-11.42	-0.92	0.00	-66.97	0.00	66.97	2,110.52	1,055.26	2,525.94	1,247.47	1.46	-0.27	0.059
60.00	-10.83	-0.91	0.00	-62.36	0.00	62.36	2,072.41	1,036.21	2,412.79	1,191.58	1.76	-0.30	0.058
65.00	-10.25	-0.90	0.00	-57.80	0.00	57.80	2,033.27	1,016.64	2,300.94	1,136.35	2.09	-0.33	0.056
70.00	-9.63	-0.88	0.00	-53.30	0.00	53.30	1,982.10	991.05	2,178.42	1,075.84	2.44	-0.36	0.054
73.50	-9.48	-0.88	0.00	-50.22	0.00	50.22	1,473.96	736.98	1,624.57	802.32	2.71	-0.38	0.069
75.00	-9.00	-0.86	0.00	-48.90	0.00	48.90	1,466.28	733.14	1,601.77	791.05	2.83	-0.39	0.068
80.00	-8.52	-0.85	0.00	-44.58	0.00	44.58	1,440.00	720.00	1,526.12	753.69	3.26	-0.42	0.065
85.00	-8.05	-0.83	0.00	-40.35	0.00	40.35	1,412.68	706.34	1,451.11	716.65	3.72	-0.46	0.062
90.00	-7.59	-0.81	0.00	-36.22	0.00	36.22	1,384.32	692.16	1,376.86	679.98	4.22	-0.49	0.059
95.00	-7.14	-0.78	0.00	-32.19	0.00	32.19	1,354.92	677.46	1,303.45	643.72	4.75	-0.52	0.055
100.00	-6.69	-0.76	0.00	-28.28	0.00	28.28	1,324.47	662.24	1,230.99	607.94	5.32	-0.56	0.052
105.00	-6.26	-0.73	0.00	-24.51	0.00	24.51	1,292.99	646.50	1,159.59	572.68	5.92	-0.59	0.048
110.00	-6.04	-0.71	0.00	-20.88	0.00	20.88	1,247.13	623.57	1,077.81	532.29	6.55	-0.62	0.044
110.00	-6.04	-0.71	0.00	-20.88	0.00	20.88	853.24	426.62	741.78	366.34	6.55	-0.62	0.064
113.00	-4.86	-0.61	0.00	-18.74	0.00	18.74	842.42	421.21	715.90	353.56	6.95	-0.64	0.059
115.00	-4.56	-0.59	0.00	-17.51	0.00	17.51	834.99	417.50	698.71	345.06	7.22	-0.65	0.056
120.00	-4.25	-0.56	0.00	-14.57	0.00	14.57	815.71	407.86	655.98	323.96	7.92	-0.69	0.050
125.00	-3.96	-0.53	0.00	-11.75	0.00	11.75	795.39	397.69	613.71	303.09	8.66	-0.72	0.044
130.00	-3.67	-0.50	0.00	-9.08	0.00	9.08	774.02	387.01	572.00	282.49	9.43	-0.75	0.037
135.00	-3.39	-0.47	0.00	-6.56	0.00	6.56	751.62	375.81	530.94	262.21	10.23	-0.77	0.030
140.00	-3.12	-0.44	0.00	-4.20	0.00	4.20	728.18	364.09	490.64	242.31	11.05	-0.79	0.022
145.00	-2.85	-0.40	0.00	-2.01	0.00	2.01	694.06	347.03	445.03	219.78	11.89	-0.81	0.013
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	12.74	-0.81	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	3.33
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)
34	147.50	312	1.828	1.667	1.025	0.356	96	388
33	142.50	320	1.706	1.144	0.823	0.274	76	398
32	137.50	328	1.588	0.742	0.654	0.201	57	408
31	132.50	336	1.475	0.441	0.513	0.138	40	418
30	127.50	344	1.366	0.222	0.397	0.083	25	428
29	122.50	352	1.261	0.069	0.302	0.036	11	438
28	117.50	360	1.160	-0.030	0.226	-0.002	-1	448
27	114.00	146	1.092	-0.074	0.182	-0.024	-3	182
26	111.50	255	1.044	-0.096	0.154	-0.037	-8	317
25	107.50	505	0.971	-0.116	0.117	-0.054	-24	627
24	102.50	515	0.883	-0.121	0.081	-0.068	-31	640
23	97.50	526	0.799	-0.112	0.053	-0.074	-34	654
22	92.50	537	0.719	-0.092	0.034	-0.070	-33	667
21	87.50	547	0.643	-0.068	0.020	-0.057	-27	680
20	82.50	558	0.572	-0.043	0.012	-0.035	-17	694
19	77.50	569	0.505	-0.018	0.007	-0.009	-4	707
18	74.25	173	0.463	-0.003	0.006	0.009	1	215
17	71.75	724	0.432	0.008	0.006	0.022	14	900
16	67.50	676	0.383	0.023	0.007	0.040	23	840
15	62.50	689	0.328	0.039	0.010	0.055	33	856
14	57.50	702	0.278	0.050	0.014	0.063	38	873
13	52.50	716	0.232	0.058	0.019	0.067	42	890
12	47.50	729	0.190	0.064	0.025	0.068	43	906
11	42.50	743	0.152	0.068	0.030	0.067	43	923
10	37.83	654	0.120	0.070	0.034	0.065	37	813
9	35.33	188	0.105	0.071	0.037	0.065	11	233
8	33.25	994	0.093	0.071	0.038	0.064	55	1,236
7	30.75	262	0.079	0.072	0.040	0.063	14	325
6	27.50	883	0.064	0.072	0.041	0.062	48	1,097
5	22.50	899	0.043	0.070	0.042	0.061	47	1,117
4	17.50	915	0.026	0.067	0.040	0.058	46	1,137
3	12.50	931	0.013	0.059	0.034	0.053	43	1,157
2	7.50	837	0.005	0.044	0.025	0.044	32	1,040
1	2.50	853	0.001	0.018	0.010	0.022	16	1,060

Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.400	5	16
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.400	26	95
Powerwave TT19-	150.00	96	1.890	1.980	1.140	0.400	33	119
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.400	11	40
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.400	11	40
Ericsson RRUS 11 (Ba	150.00	165	1.890	1.980	1.140	0.400	57	205
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.400	55	198
Ericsson RRUS 32 (55	150.00	165	1.890	1.980	1.140	0.400	57	205
Powerwave Allgon 777	150.00	105	1.890	1.980	1.140	0.400	36	130
Quintel QS66512-2	150.00	333	1.890	1.980	1.140	0.400	115	414
CCI HPA-65R-BUU-H6	150.00	153	1.890	1.980	1.140	0.400	53	190
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.400	693	2,485
RFS FD9R6004/1C-3L	113.00	19	1.073	-0.084	0.170	-0.030	0	23
Alcatel-Lucent RRH2x	113.00	132	1.073	-0.084	0.170	-0.030	-3	164
Decibel 932DG90T2E-M	113.00	29	1.073	-0.084	0.170	-0.030	-1	35
RFS DB-T1-6Z-8AB-0Z	113.00	44	1.073	-0.084	0.170	-0.030	-1	55
Andrew HBX-6517DS-VT	113.00	40	1.073	-0.084	0.170	-0.030	-1	49
Powerwave Allgon P65	113.00	99	1.073	-0.084	0.170	-0.030	-3	123
Andrew LNX-6514DS-VT	113.00	116	1.073	-0.084	0.170	-0.030	-3	145
Round T-Arms	113.00	750	1.073	-0.084	0.170	-0.030	-19	932
		23,636	51.873	27.522	20.102	6.166	1,832	29,372

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)
34	147.50	312	1.828	1.667	1.025	0.356	96	267
33	142.50	320	1.706	1.144	0.823	0.274	76	274
32	137.50	328	1.588	0.742	0.654	0.201	57	281
31	132.50	336	1.475	0.441	0.513	0.138	40	288
30	127.50	344	1.366	0.222	0.397	0.083	25	295
29	122.50	352	1.261	0.069	0.302	0.036	11	302
28	117.50	360	1.160	-0.030	0.226	-0.002	-1	309
27	114.00	146	1.092	-0.074	0.182	-0.024	-3	125
26	111.50	255	1.044	-0.096	0.154	-0.037	-8	219
25	107.50	505	0.971	-0.116	0.117	-0.054	-24	433
24	102.50	515	0.883	-0.121	0.081	-0.068	-31	442
23	97.50	526	0.799	-0.112	0.053	-0.074	-34	451
22	92.50	537	0.719	-0.092	0.034	-0.070	-33	460
21	87.50	547	0.643	-0.068	0.020	-0.057	-27	469
20	82.50	558	0.572	-0.043	0.012	-0.035	-17	479
19	77.50	569	0.505	-0.018	0.007	-0.009	-4	488
18	74.25	173	0.463	-0.003	0.006	0.009	1	148
17	71.75	724	0.432	0.008	0.006	0.022	14	621
16	67.50	676	0.383	0.023	0.007	0.040	23	579
15	62.50	689	0.328	0.039	0.010	0.055	33	591
14	57.50	702	0.278	0.050	0.014	0.063	38	602
13	52.50	716	0.232	0.058	0.019	0.067	42	614
12	47.50	729	0.190	0.064	0.025	0.068	43	625
11	42.50	743	0.152	0.068	0.030	0.067	43	637
10	37.83	654	0.120	0.070	0.034	0.065	37	561
9	35.33	188	0.105	0.071	0.037	0.065	11	161
8	33.25	994	0.093	0.071	0.038	0.064	55	853
7	30.75	262	0.079	0.072	0.040	0.063	14	224
6	27.50	883	0.064	0.072	0.041	0.062	48	757
5	22.50	899	0.043	0.070	0.042	0.061	47	771
4	17.50	915	0.026	0.067	0.040	0.058	46	785
3	12.50	931	0.013	0.059	0.034	0.053	43	798
2	7.50	837	0.005	0.044	0.025	0.044	32	717

1	2.50	853	0.001	0.018	0.010	0.022	16	731
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.400	5	11
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.400	26	65
Powerwave TT19-	150.00	96	1.890	1.980	1.140	0.400	33	82
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.400	11	27
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.400	11	27
Ericsson RRUS 11 (Ba	150.00	165	1.890	1.980	1.140	0.400	57	141
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.400	55	136
Ericsson RRUS 32 (55	150.00	165	1.890	1.980	1.140	0.400	57	142
Powerwave Allgon 777	150.00	105	1.890	1.980	1.140	0.400	36	90
Quintel QS66512-2	150.00	333	1.890	1.980	1.140	0.400	115	285
CCI HPA-65R-BUU-H6	150.00	153	1.890	1.980	1.140	0.400	53	131
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.400	693	1,715
RFS FD9R6004/1C-3L	113.00	19	1.073	-0.084	0.170	-0.030	0	16
Alcatel-Lucent RRH2x	113.00	132	1.073	-0.084	0.170	-0.030	-3	113
Decibel 932DG90T2E-M	113.00	29	1.073	-0.084	0.170	-0.030	-1	24
RFS DB-T1-6Z-8AB-0Z	113.00	44	1.073	-0.084	0.170	-0.030	-1	38
Andrew HBX-6517DS-VT	113.00	40	1.073	-0.084	0.170	-0.030	-1	34
Powerwave Allgon P65	113.00	99	1.073	-0.084	0.170	-0.030	-3	85
Andrew LNX-6514DS-VT	113.00	116	1.073	-0.084	0.170	-0.030	-3	100
Round T-Arms	113.00	750	1.073	-0.084	0.170	-0.030	-19	643
		23,636	51.873	27.522	20.102	6.166	1,832	20,264

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	-28.31	-1.83	0.00	-236.99	0.00	236.99	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.109
5.00	-27.27	-1.81	0.00	-227.86	0.00	227.86	3,114.35	1,557.18	4,645.51	2,294.24	0.02	-0.04	0.108
10.00	-26.11	-1.79	0.00	-218.79	0.00	218.79	3,070.50	1,535.25	4,480.02	2,212.51	0.09	-0.09	0.107
15.00	-24.97	-1.76	0.00	-209.84	0.00	209.84	3,025.61	1,512.81	4,315.90	2,131.46	0.20	-0.13	0.107
20.00	-23.85	-1.73	0.00	-201.03	0.00	201.03	2,979.68	1,489.84	4,153.25	2,051.14	0.36	-0.18	0.106
25.00	-22.76	-1.70	0.00	-192.38	0.00	192.38	2,932.71	1,466.36	3,992.19	1,971.59	0.57	-0.22	0.105
30.00	-22.43	-1.69	0.00	-183.89	0.00	183.89	2,875.21	1,437.61	3,820.20	1,886.65	0.83	-0.27	0.105
31.50	-21.19	-1.64	0.00	-181.35	0.00	181.35	2,854.29	1,427.15	3,764.49	1,859.14	0.92	-0.29	0.105
35.00	-20.96	-1.64	0.00	-175.60	0.00	175.60	2,805.48	1,402.74	3,636.10	1,795.73	1.14	-0.32	0.105
35.67	-20.15	-1.61	0.00	-174.51	0.00	174.51	2,248.07	1,124.03	2,973.91	1,468.70	1.19	-0.33	0.128
40.00	-19.22	-1.57	0.00	-167.55	0.00	167.55	2,218.59	1,109.29	2,872.23	1,418.49	1.50	-0.37	0.127
45.00	-18.31	-1.54	0.00	-159.68	0.00	159.68	2,183.60	1,091.80	2,755.77	1,360.97	1.92	-0.43	0.126
50.00	-17.42	-1.51	0.00	-151.96	0.00	151.96	2,147.58	1,073.79	2,640.30	1,303.95	2.40	-0.49	0.125
55.00	-16.55	-1.49	0.00	-144.39	0.00	144.39	2,110.52	1,055.26	2,525.94	1,247.47	2.95	-0.55	0.124
60.00	-15.69	-1.46	0.00	-136.97	0.00	136.97	2,072.41	1,036.21	2,412.79	1,191.58	3.56	-0.61	0.123
65.00	-14.85	-1.45	0.00	-129.66	0.00	129.66	2,033.27	1,016.64	2,300.94	1,136.35	4.24	-0.68	0.121
70.00	-13.95	-1.44	0.00	-122.43	0.00	122.43	1,982.10	991.05	2,178.42	1,075.84	4.99	-0.75	0.121
73.50	-13.74	-1.44	0.00	-117.41	0.00	117.41	1,473.96	736.98	1,624.57	802.32	5.55	-0.80	0.156
75.00	-13.03	-1.45	0.00	-115.25	0.00	115.25	1,466.28	733.14	1,601.77	791.05	5.81	-0.82	0.155
80.00	-12.33	-1.47	0.00	-108.02	0.00	108.02	1,440.00	720.00	1,526.12	753.69	6.71	-0.90	0.152
85.00	-11.65	-1.50	0.00	-100.67	0.00	100.67	1,412.68	706.34	1,451.11	716.65	7.69	-0.99	0.149
90.00	-10.98	-1.54	0.00	-93.15	0.00	93.15	1,384.32	692.16	1,376.86	679.98	8.77	-1.07	0.145
95.00	-10.32	-1.58	0.00	-85.44	0.00	85.44	1,354.92	677.46	1,303.45	643.72	9.94	-1.16	0.140
100.00	-9.68	-1.61	0.00	-77.55	0.00	77.55	1,324.47	662.24	1,230.99	607.94	11.20	-1.25	0.135
105.00	-9.05	-1.63	0.00	-69.50	0.00	69.50	1,292.99	646.50	1,159.59	572.68	12.56	-1.34	0.128
110.00	-8.73	-1.64	0.00	-61.33	0.00	61.33	1,247.13	623.57	1,077.81	532.29	14.00	-1.42	0.122
110.00	-8.73	-1.64	0.00	-61.33	0.00	61.33	853.24	426.62	741.78	366.34	14.00	-1.42	0.178
113.00	-7.02	-1.64	0.00	-56.40	0.00	56.40	842.42	421.21	715.90	353.56	14.92	-1.48	0.168
115.00	-6.57	-1.64	0.00	-53.12	0.00	53.12	834.99	417.50	698.71	345.06	15.54	-1.52	0.162
120.00	-6.13	-1.63	0.00	-44.91	0.00	44.91	815.71	407.86	655.98	323.96	17.20	-1.63	0.146
125.00	-5.70	-1.60	0.00	-36.77	0.00	36.77	795.39	397.69	613.71	303.09	18.96	-1.73	0.129
130.00	-5.28	-1.56	0.00	-28.77	0.00	28.77	774.02	387.01	572.00	282.49	20.82	-1.82	0.109
135.00	-4.87	-1.49	0.00	-20.99	0.00	20.99	751.62	375.81	530.94	262.21	22.78	-1.90	0.087
140.00	-4.48	-1.41	0.00	-13.53	0.00	13.53	728.18	364.09	490.64	242.31	24.81	-1.97	0.062
145.00	-4.09	-1.30	0.00	-6.50	0.00	6.50	694.06	347.03	445.03	219.78	26.89	-2.01	0.035
150.00	0.00	-1.15	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	29.01	-2.02	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.53	-1.82	0.00	-229.26	0.00	229.26	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.103
5.00	-18.81	-1.80	0.00	-220.14	0.00	220.14	3,114.35	1,557.18	4,645.51	2,294.24	0.02	-0.04	0.102
10.00	-18.01	-1.77	0.00	-211.12	0.00	211.12	3,070.50	1,535.25	4,480.02	2,212.51	0.09	-0.08	0.101
15.00	-17.23	-1.74	0.00	-202.25	0.00	202.25	3,025.61	1,512.81	4,315.90	2,131.46	0.20	-0.13	0.101
20.00	-16.46	-1.70	0.00	-193.56	0.00	193.56	2,979.68	1,489.84	4,153.25	2,051.14	0.35	-0.17	0.100
25.00	-15.70	-1.67	0.00	-185.04	0.00	185.04	2,932.71	1,466.36	3,992.19	1,971.59	0.55	-0.21	0.099
30.00	-15.47	-1.66	0.00	-176.72	0.00	176.72	2,875.21	1,437.61	3,820.20	1,886.65	0.80	-0.26	0.099
31.50	-14.62	-1.60	0.00	-174.23	0.00	174.23	2,854.29	1,427.15	3,764.49	1,859.14	0.89	-0.28	0.099
35.00	-14.46	-1.60	0.00	-168.61	0.00	168.61	2,805.48	1,402.74	3,636.10	1,795.73	1.10	-0.31	0.099
35.67	-13.90	-1.56	0.00	-167.55	0.00	167.55	2,248.07	1,124.03	2,973.91	1,468.70	1.14	-0.32	0.120
40.00	-13.26	-1.53	0.00	-160.77	0.00	160.77	2,218.59	1,109.29	2,872.23	1,418.49	1.45	-0.36	0.119
45.00	-12.63	-1.49	0.00	-153.12	0.00	153.12	2,183.60	1,091.80	2,755.77	1,360.97	1.85	-0.41	0.118
50.00	-12.02	-1.46	0.00	-145.65	0.00	145.65	2,147.58	1,073.79	2,640.30	1,303.95	2.32	-0.47	0.117
55.00	-11.41	-1.43	0.00	-138.35	0.00	138.35	2,110.52	1,055.26	2,525.94	1,247.47	2.84	-0.53	0.116
60.00	-10.82	-1.40	0.00	-131.20	0.00	131.20	2,072.41	1,036.21	2,412.79	1,191.58	3.43	-0.59	0.115
65.00	-10.24	-1.38	0.00	-124.19	0.00	124.19	2,033.27	1,016.64	2,300.94	1,136.35	4.08	-0.65	0.114
70.00	-9.62	-1.37	0.00	-117.28	0.00	117.28	1,982.10	991.05	2,178.42	1,075.84	4.80	-0.72	0.114
73.50	-9.47	-1.37	0.00	-112.48	0.00	112.48	1,473.96	736.98	1,624.57	802.32	5.34	-0.76	0.147
75.00	-8.98	-1.38	0.00	-110.41	0.00	110.41	1,466.28	733.14	1,601.77	791.05	5.59	-0.78	0.146
80.00	-8.50	-1.40	0.00	-103.51	0.00	103.51	1,440.00	720.00	1,526.12	753.69	6.45	-0.86	0.143
85.00	-8.03	-1.43	0.00	-96.50	0.00	96.50	1,412.68	706.34	1,451.11	716.65	7.40	-0.95	0.140
90.00	-7.57	-1.47	0.00	-89.34	0.00	89.34	1,384.32	692.16	1,376.86	679.98	8.43	-1.03	0.137
95.00	-7.11	-1.50	0.00	-81.99	0.00	81.99	1,354.92	677.46	1,303.45	643.72	9.56	-1.11	0.133
100.00	-6.67	-1.54	0.00	-74.47	0.00	74.47	1,324.47	662.24	1,230.99	607.94	10.77	-1.20	0.128
105.00	-6.23	-1.56	0.00	-66.79	0.00	66.79	1,292.99	646.50	1,159.59	572.68	12.07	-1.28	0.121
110.00	-6.01	-1.57	0.00	-58.99	0.00	58.99	1,247.13	623.57	1,077.81	532.29	13.46	-1.37	0.116
110.00	-6.01	-1.57	0.00	-58.99	0.00	58.99	853.24	426.62	741.78	366.34	13.46	-1.37	0.168
113.00	-4.83	-1.58	0.00	-54.28	0.00	54.28	842.42	421.21	715.90	353.56	14.33	-1.42	0.159
115.00	-4.52	-1.58	0.00	-51.12	0.00	51.12	834.99	417.50	698.71	345.06	14.93	-1.46	0.154
120.00	-4.22	-1.57	0.00	-43.23	0.00	43.23	815.71	407.86	655.98	323.96	16.52	-1.57	0.139
125.00	-3.92	-1.54	0.00	-35.39	0.00	35.39	795.39	397.69	613.71	303.09	18.21	-1.66	0.122
130.00	-3.63	-1.50	0.00	-27.68	0.00	27.68	774.02	387.01	572.00	282.49	20.01	-1.75	0.103
135.00	-3.35	-1.44	0.00	-20.20	0.00	20.20	751.62	375.81	530.94	262.21	21.88	-1.83	0.081
140.00	-3.08	-1.35	0.00	-13.02	0.00	13.02	728.18	364.09	490.64	242.31	23.83	-1.89	0.058
145.00	-2.81	-1.25	0.00	-6.25	0.00	6.25	694.06	347.03	445.03	219.78	25.83	-1.93	0.033
150.00	0.00	-1.15	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	27.87	-1.95	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	23.96	0.00	28.28	0.00	0.00	2179.64	35.67	0.97
0.9D + 1.6W	23.94	0.00	21.19	0.00	0.00	2132.53	35.67	0.94
1.2D + 1.0Di + 1.0Wi	5.85	0.00	45.29	0.00	0.00	584.86	73.50	0.29
(1.2 + 0.2Sds) * DL + E ELFM	0.93	0.00	28.31	0.00	0.00	122.32	73.50	0.07
(1.2 + 0.2Sds) * DL + E EMAM	1.83	0.00	28.31	0.00	0.00	236.99	110.00	0.18
(0.9 - 0.2Sds) * DL + E ELFM	0.92	0.00	19.53	0.00	0.00	118.59	73.50	0.07
(0.9 - 0.2Sds) * DL + E EMAM	1.82	0.00	19.53	0.00	0.00	229.26	110.00	0.17
1.0D + 1.0W	6.27	0.00	23.63	0.00	0.00	562.20	35.67	0.26

Code Rev.	G	Date	1/19/2018
		Engineer	Felix.Buabeng
		Site #	302519
Moment	2179.6 k-ft	Carrier	AT&T MOBILITY
Axial	28.3 k		

Base/Flange Plate	Plate Type	*Baseplate*	
	Pole Diameter	37.38	in
	Pole Thickness	0.375	in
	Plate Length	44	in
	Plate Thickness	2.5	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	1382.37	k-in
	Applied	617.20	k-in
Stiffeners	#	*0*	

Bolts	#	*8*	
	Bolt Circle	44	in
	(R)adial / (S)quare	S	
	Bolt Gap	6	in
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	183.14	k
Reinforcement	#	*4*	
●	DYW. Circle	44	in
	Offset Angle	22.5	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	ϕ_s Resistance	392.70	k
	Applied	213.51	k
Extra Bolts O	#	*0*	

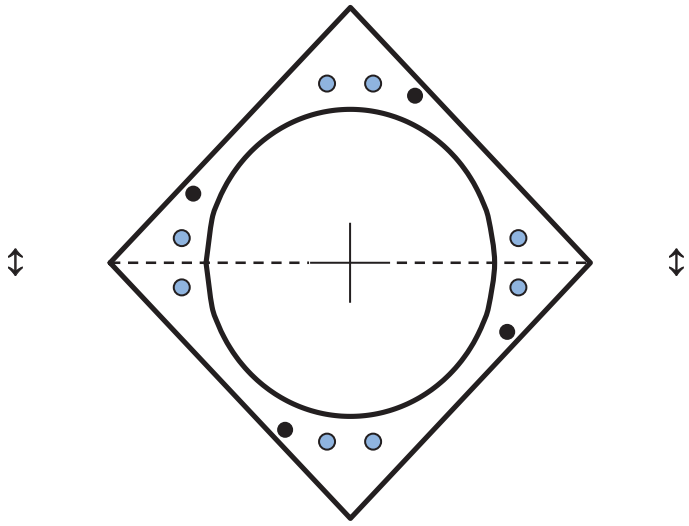


Plate Stress Ratio:
0.45 (Pass)

Bolt Stress Ratio:
0.70 (Pass)

Reinforcement Stress Ratio:
0.54 (Pass)

Base/Flange Plate			
	Plate Type	***Flange***	***@ 110.0 ft***
	Pole Diameter	21.267	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	50	ksi
	Weld Length	0.1875	in
	ϕ_s Resistance	208.44	k-in
	Applied	65.99	k-in

Stiffeners			
	#	***12***	***Show***
	Thickness	0.375	in
	Length	3	in
	Height	6	in
	Chamfer	0	in
	Offset Angle	45	°
	Fy	36	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	44.24	k

Reinforcement ●		
#	***0***	

Extra Bolts O		
#	***0***	

Code Rev. ***G***

Moment 288.7 k-ft

Axial 6.9 k

Date 1/19/2018

Engineer Felix.Buabeng

Site # 302519

Carrier AT&T MOBILITY

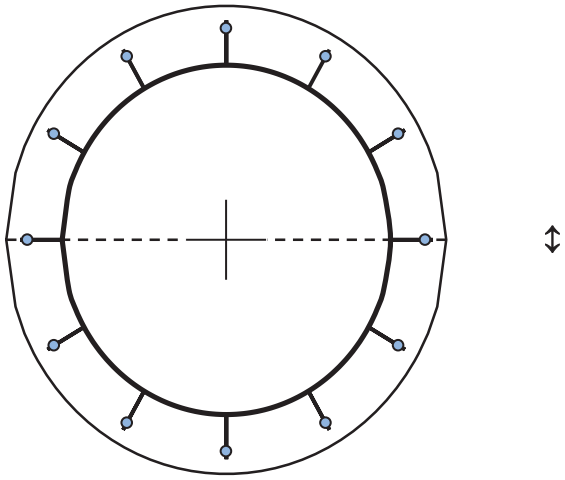


Plate Stress Ratio:

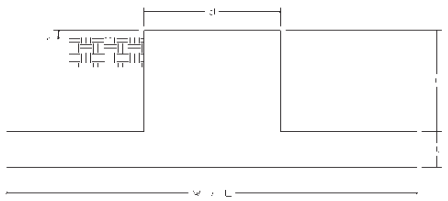
0.32 (Pass)

Bolt Stress Ratio:

0.81 (Pass)

Site Name:	Southbury, CT
Site Number:	302519
Engineering Number:	OAA720735
Engineer:	Felix.Buabeng
Date:	01/19/18
Tower Type:	MP

Program Last Updated: *5/13/2014*



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

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	28.3	k	Concrete Strength (f'_c):	3000	psi
Uplift/Leg:	0.0	k	Pad Tension Steel Depth:	32.00	in
Total Shear:	24.0	k	ϕ_{Shear}:	0.75	
Moment:	2179.6	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	28.3	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	8.00	ft	β:	0.85	
Diameter of Pier (d):	5.00	ft	Bottom Pad Rebar Size #:	10	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	36	
Width of Pad (W):	18.00	ft	Pad Bottom Steel Area:	45.72	in^2
Length of Pad (L):	18.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.00	ft	Top Pad Rebar Size #:	10	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	45.72	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	10.00	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	52	
Unit Weight of Soil Above Water Table:	110.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	52.0	in
Unit Weight of Soil Below Water Table:	47.6	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	15.0	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.35		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	6000.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	0.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	2383.3	k-ft
OTM Resistance:	3145.0	k-ft
Design OTM / OTM Resistance:	0.76	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	4283	psf
Factored Nominal Bearing Pressure:	4500	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.95	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

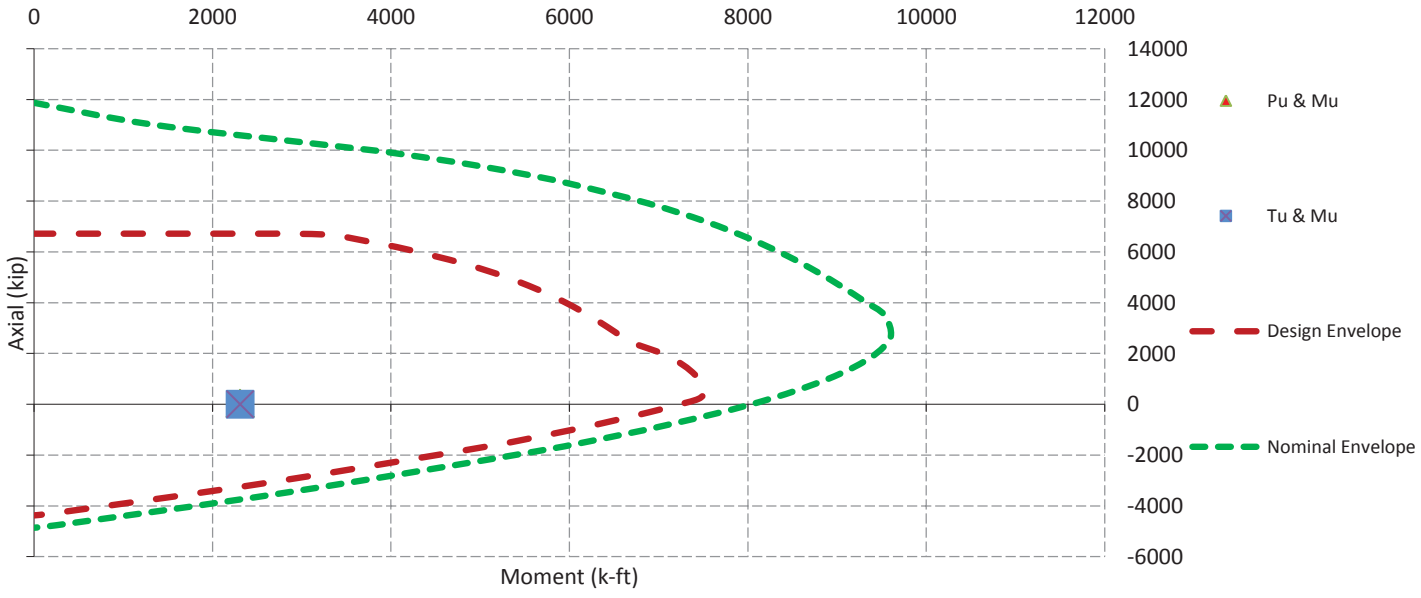
Sliding Factor of Safety

Total Factored Sliding Resistance:	92.7	k
Sliding Design / Sliding Resistance:	0.26	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	152.0	k
One Way Shear Capacity (ϕV_c):	477.1	k - ACI11.3.1.1
$V_u / \phi V_c$:	0.32	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	939.6	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	6696.2	k-ft - ACI10.3
$M_u / \phi M_n$:	0.14	Result: OK
Load Direction Controling Flexural Capacity:	Diagonal to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	583.0	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	6148.2	k-ft
$M_u / \phi M_n$:	0.09	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0066	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0066	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1519.7	k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00	Result: OK
Factored Moment in Pier (M_u):	2311.4	k-ft
Pier Moment Capacity (ϕM_n):	9281.4	k-ft
$M_u / \phi M_n$:	0.25	Result: OK
Factored Shear in Pier (V_u):	24.0	k
Pier Shear Capacity (ϕV_n):	233.5	k
$V_u / \phi V_c$:	0.10	Result: OK
Pier Shear Reinforcement Ratio:	0.0007	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	4380.5	k
$T_u / \phi T_n$:	0.00	Result: OK
Factored Compression in Pier (P_u):	28.3	k
Pier Compression Capacity (ϕP_n):	3641.6	k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01	Result: OK
Pier Compression Reinforcement Ratio:	0.029	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.25	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



WIRELESS COMMUNICATIONS FACILITY
CT2126 - LTE 3C/4C FirstNet (RETROFIT)
SOUTHBURY
HORSE FENCE HILL ROAD
SOUTHBURY, CT 06488

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

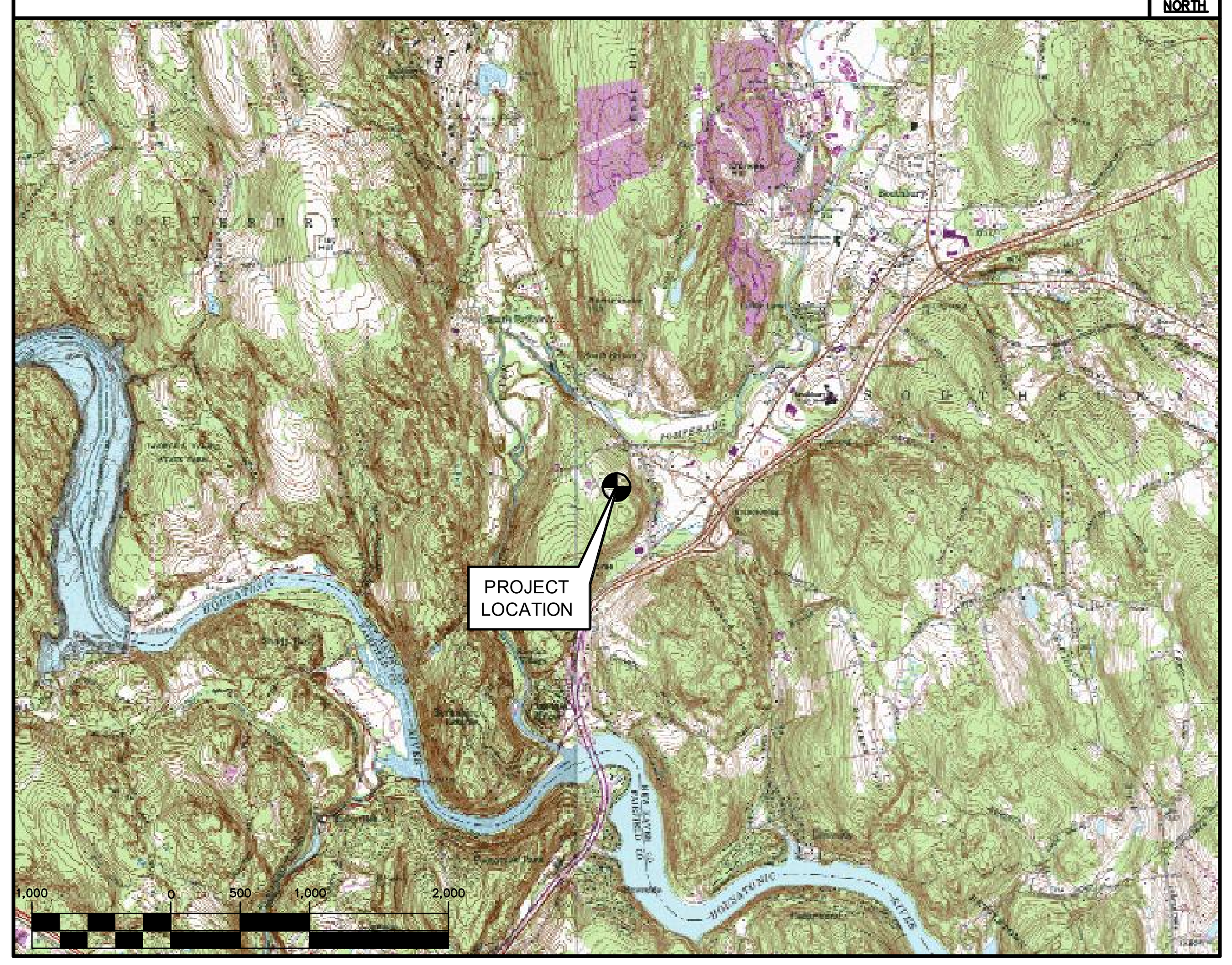
TO: HORSE FENCE HILL ROAD, SOUTHBURY, CONNECTICUT

1.	TURN LEFT ONTO CAPITAL BLVD.	0.36 MI
2.	TURN LEFT ONTO WEST ST.	0.27 MI
3.	MERGE ONTO I–91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN.	0.30 MI
4.	MERGE ONTO I–691 W VIA EXIT 18 TOWARD MERIDEN/WATERBURY.	9.06 MI
5.	MERGE ONTO I–84 W VIA EXIT 1 ON THE LEFT TOWARD WATERBURY/DANBURY.	7.98 MI
6.	TAKE THE CT–172 EXIT, EXIT 14, TOWARD SOUTH BRITAIN.	20.49 MI
7.	KEEP RIGHT TO TAKE THE RAMP TOWARD SOUTH BRITAIN/SOUTHBURY TRAINING SCHOOL.	0.27 MI
8.	TURN RIGHT ONTO LAKESIDE RD/CT–172. CONTINUE TO FOLLOW CT–172.	0.02 MI
9.	TAKE THE 3RD LEFT ONTO HORSE FENCE HILL RD.	0.55 MI
10.	TURN LEFT AT 129 KRSHISEZKI SNET POLE 81.	4.00 MI
11.	CONTINUE ON PRIVATE DRIVEWAY ACCESS ROAD.	3.00 MI

VICINITY MAP

SCALE: 1" = 1000'

NORTH



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:
   - REMOVE KMW ANTENNA AT POS. 3. AND REPLACE WITH QUNITEL ANTENNA AT POS. 3. (TOTAL OF 3)
   - INSTALL CCI ANTENNA AT POS 4. (TOTAL OF 3)
   - INSTALL (1) DC/FIBER SQUID.
   - REMOVE RRUS–12 AND REPLACE WITH RRUS–32 B2 AT POS. 3. (TOTAL OF 3)
   - INSTALL RRUS–32 AT POS. 4. (TOTAL OF 3)
   - RELOCATE RRUS–11 FROM POS. 3 TO POS. 4. (TOTAL OF 3)
   - INSTALL (3) LOW BAND COMBINERS

   B. EXISTING ANTENNA RELOCATIONS ARE REQUIRED TO ACCOUNT FOR THE NEWLY SCHEDULED POSITION 2 AND 3 ANTENNA INSTALLATIONS. REFER TO THE ACCOMPANYING DRAWINGS FOR SPECIFIC ADDITIONAL INFORMATION.

   C. AT THE EQUIPMENT SHELTER
   - INSTALL PROPOSED RRU RACK TO HOLD THE PROPOSED (2) BI4–4478 RRH, WITH (8) SURGE ARRESTORS.
   - DECOMMISSION GSM LINE COMPONENTS, AND REPLACE THEM WITH (3) LOW BAND COMBINERS.
   - IN LTE RACK, UPGRADE DUS TO 5216+XMU.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2126
AT&T SITE NAME:	SOUTHBURY
SITE ADDRESS:	HORSE FENCE HILL ROAD 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 – MRCTB027272 PACE JOB 2 – MRCTB027146 PACE JOB 3 – MRCTB027247
AT&T FA LOCATION CODE:	10035064
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°–27'–35.96" N LONGITUDE: 73°–14'–42.06" W GROUND ELEVATION: ±340' 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	06/22/18	DMD	CAG	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

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AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

SOUTHBURY

CT2126 - LTE 3C/4C FIRSTNET (RETROFIT)

HORSE FENCE HILL ROAD
SOUTHBURY, CT 06488

DATE:	03/06/18
SCALE:	AS NOTED
JOB NO.	18000.13

TITLE SHEET

T–1

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	17°	0°	POWERWAVE (7770)	156'	UMTS 850	REMAIN	PWAV: TT19–08BP111–001 TWIN 1900 W/850BP (1)	KATHREIN: 782–10250 (2)		1 5/8Ø" COAX (2)
									DBC0061F1V51–2 (1) AT SHELTER		
ALPHA	POS. 3	17°	0°	QUINTEL (QS66512–2)	156'	LTE 700 B14/PCS	NEW		DBC0061F1V51–2 (1) ON TOWER	B14 4478 (1), RRUS–32 B2 (1)	COAX 1 5/8Ø" (2), FIBER AND DC POWER
ALPHA	POS. 4	17°	0°	CCI (HPA–65R–BUU–H6)	156'	LTE 700/WCS	NEW			RRUS–11 (1), RRUS–32 (1)	FIBER AND DC POWER
BETA	POS. 1	135°	0°	POWERWAVE (7770)	156'	UMTS 850	REMAIN	PWAV: TT19–08BP111–001 TWIN 1900 W/850BP (1)	KATHREIN: 782–10250 (2)		1 5/8Ø" COAX (2)
									DBC0061F1V51–2 (1) AT SHELTER		
BETA	POS. 3	135°	0°	QUINTEL (QS66512–2)	156'	LTE 700 B14/PCS	NEW		DBC0061F1V51–2 (1) ON TOWER	B14 4478 (1) TO BE SHARED, RRUS–32 B2 (1)	1 5/8Ø" COAX (2), FIBER AND DC POWER
BETA	POS. 4	135°	0°	CCI (HPA–65R–BUU–H6)	156'	LTE 700/WCS	NEW			RRUS–11 (1), RRUS–32 (1)	FIBER AND DC POWER
GAMMA	POS. 1	258°	0°	POWERWAVE (7770)	156'	UMTS 850	REMAIN	PWAV: TT19–08BP111–001 TWIN 1900 W/850BP (1)	KATHREIN: 782–10250 (2)		1 5/8Ø" COAX (2)
									DBC0061F1V51–2 (1) IN SHELTER		
GAMMA	POS. 3	258°	0°	QUINTEL (QS66512–2)	156'	LTE 700 B14/PCS	NEW		DBC0061F1V51–2 (1) ON TOWER	SHARING B14 4478 FROM OTHER SECTOR, RRUS–32 B2 (1)	1 5/8Ø" COAX (2), FIBER AND DC POWER
GAMMA	POS. 4	258°	0°	CCI (HPA–65R–BUU–H6)	156'	LTE 700/WCS	NEW			RRUS–11 (1), RRUS–32 (1)	FIBER AND DC POWER

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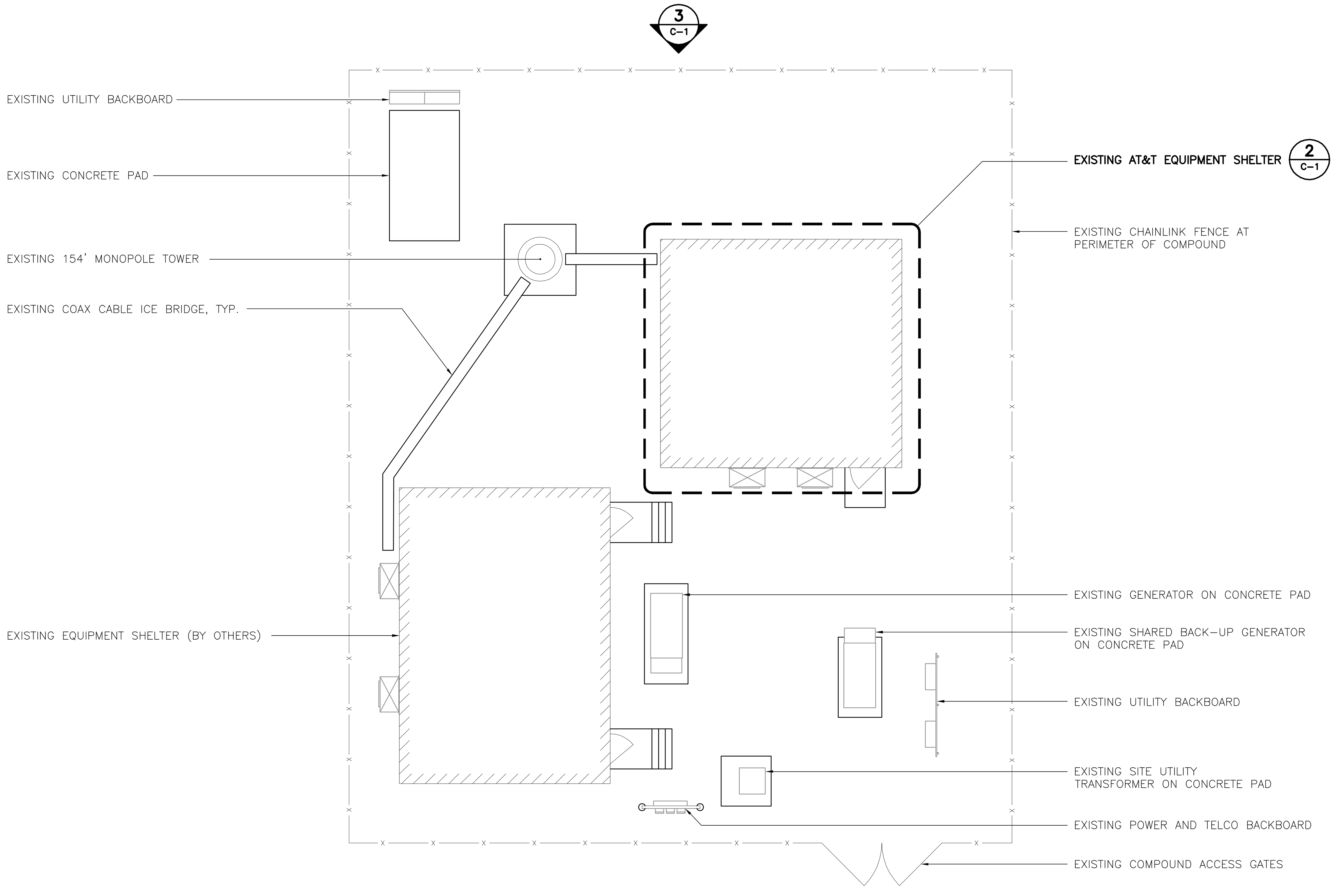
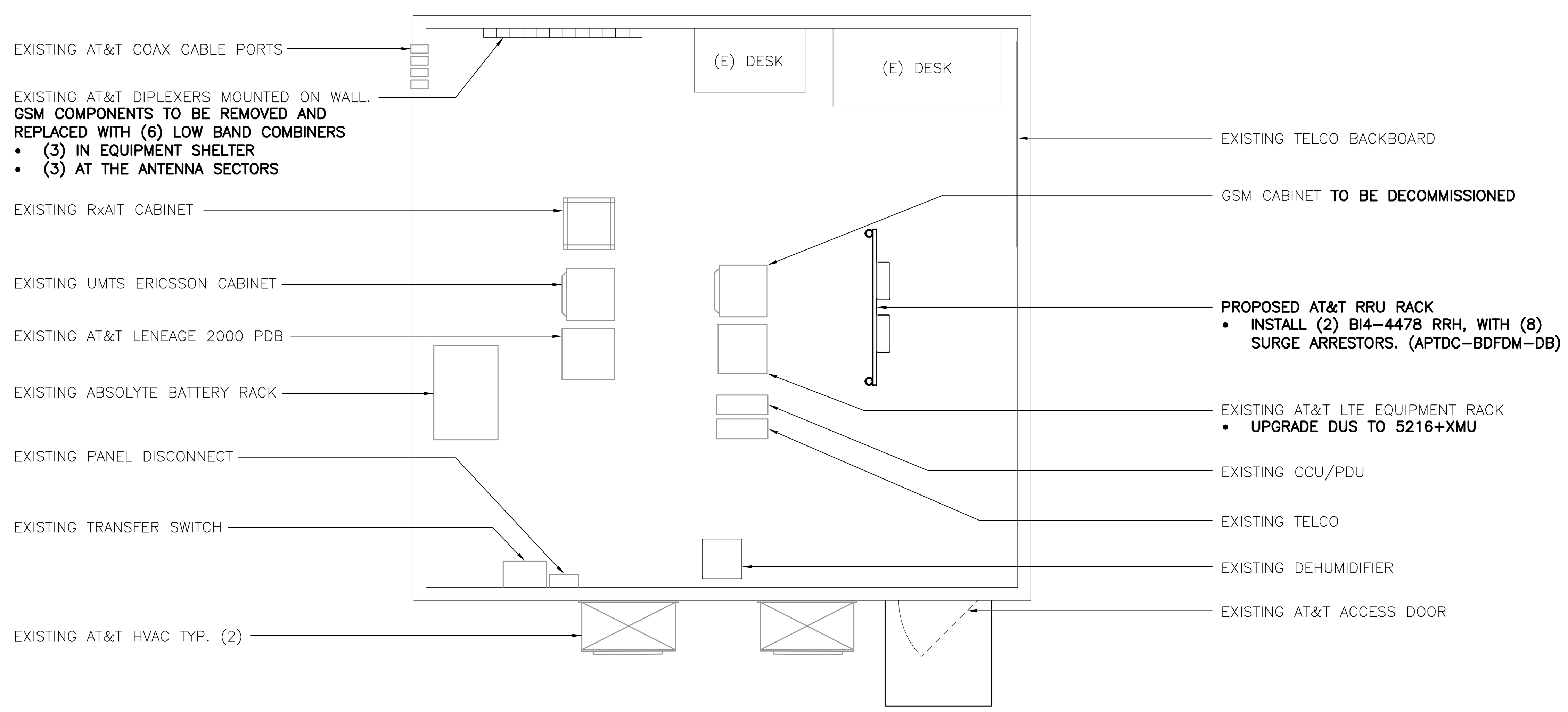
NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE

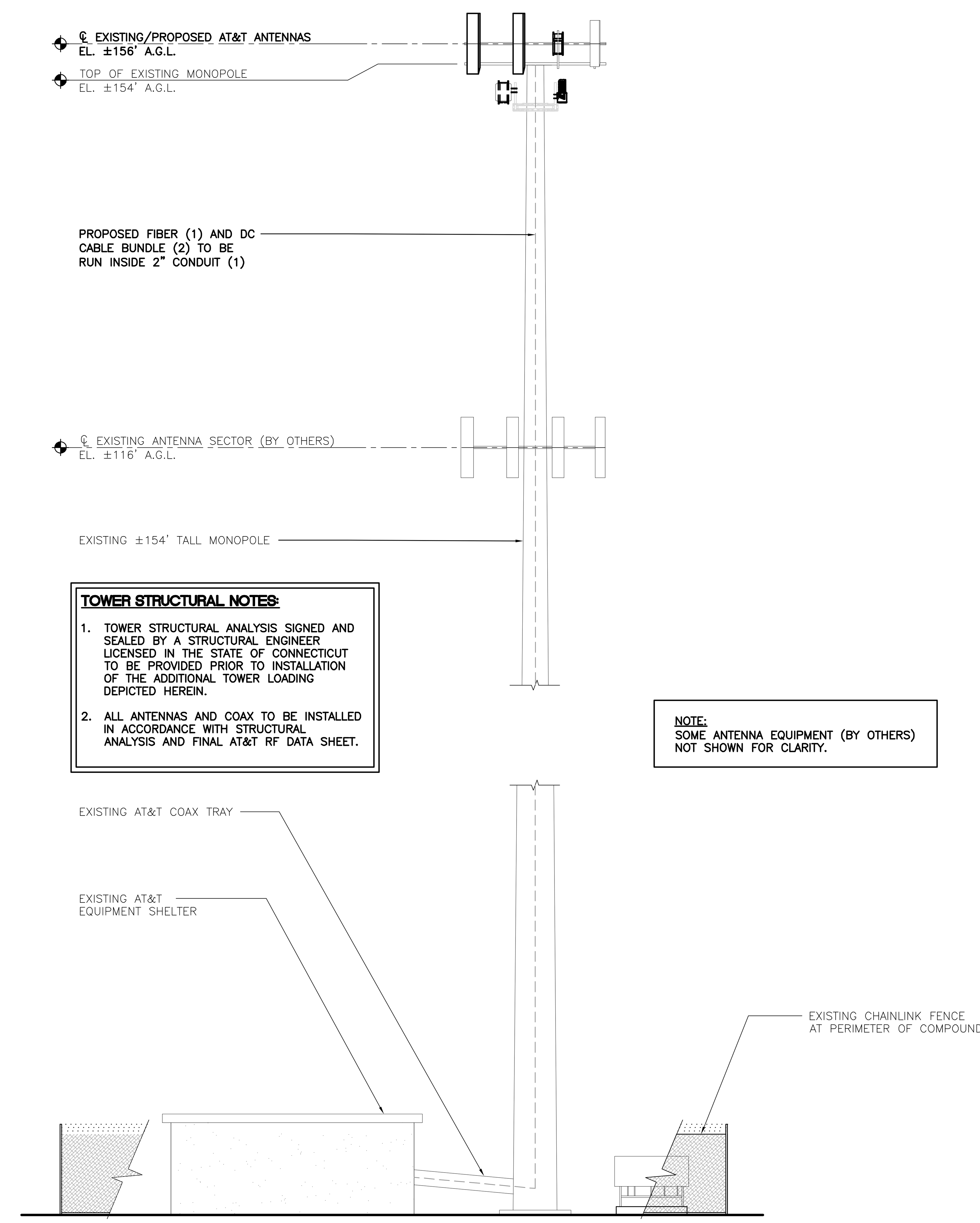
N–1



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



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



TOWER STRUCTURAL NOTES:

1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.

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

3
C-1
NORTH ELEVATION - PROPOSED
SCALE: 1/8" = 1'-0"

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PLANS AND ELEVATION

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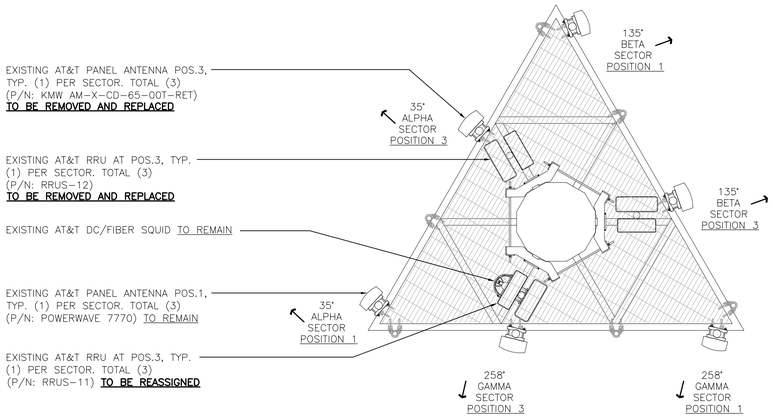
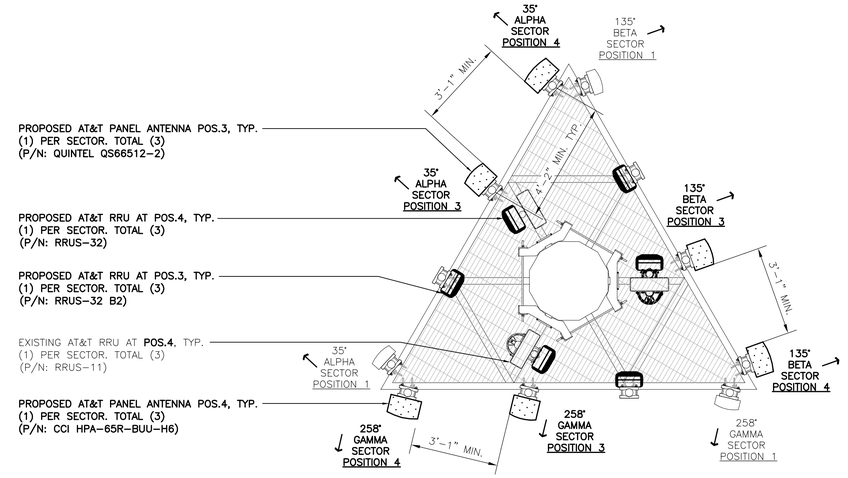


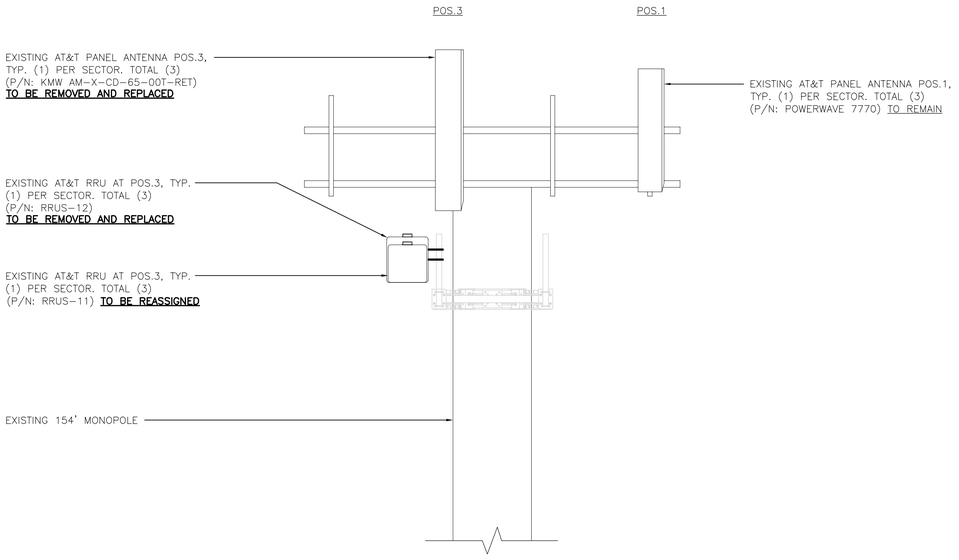
1 C-2 **EXISTING ANTENNA PLAN**
SCALE: 3/8" = 1'-0"

TRUE NORTH



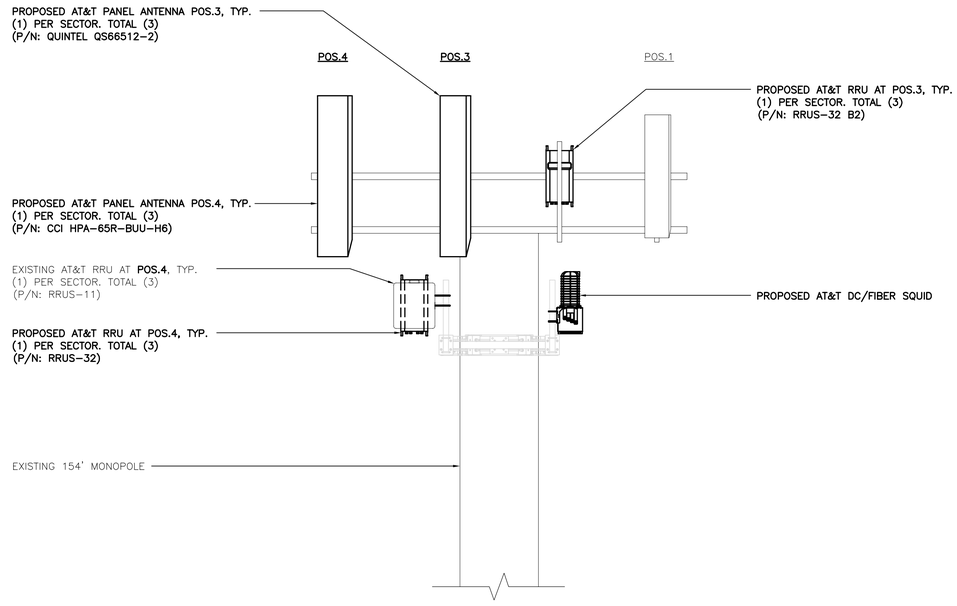
2 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 3/8" = 1'-0"

TRUE NORTH



TYPICAL SECTOR

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



TYPICAL SECTOR

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

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ANTENNA CONFIGURATION DETAILS

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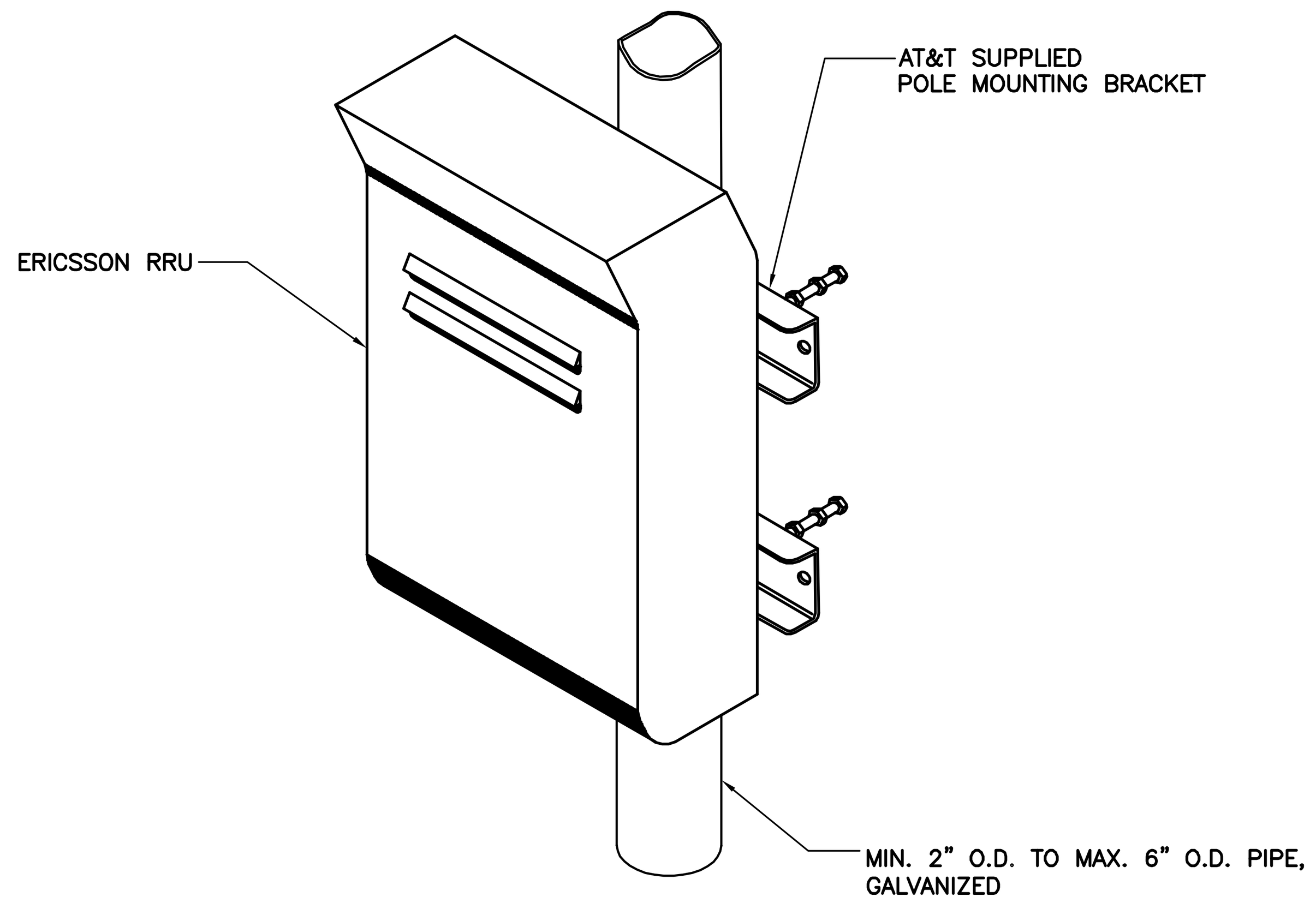
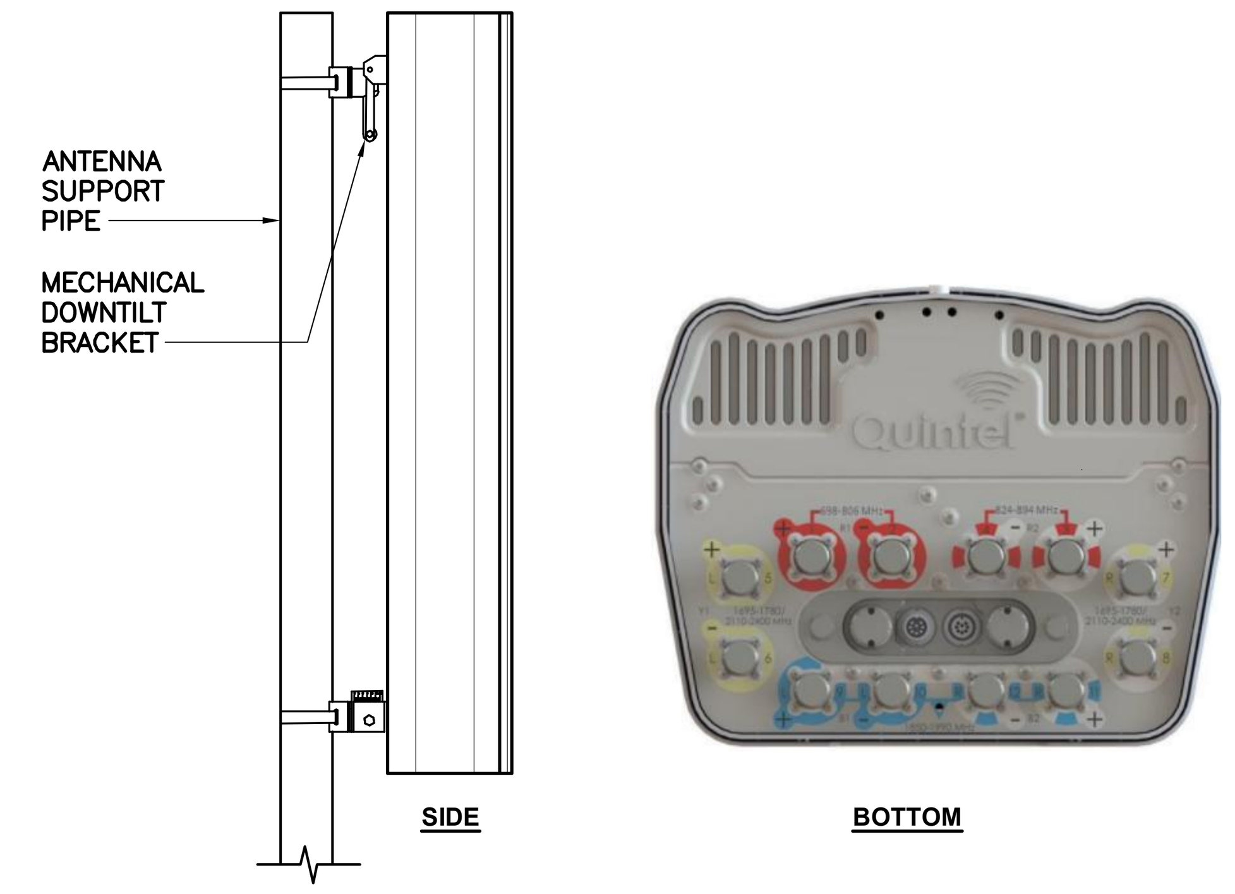


ISOMETRIC VIEW

NOTES:

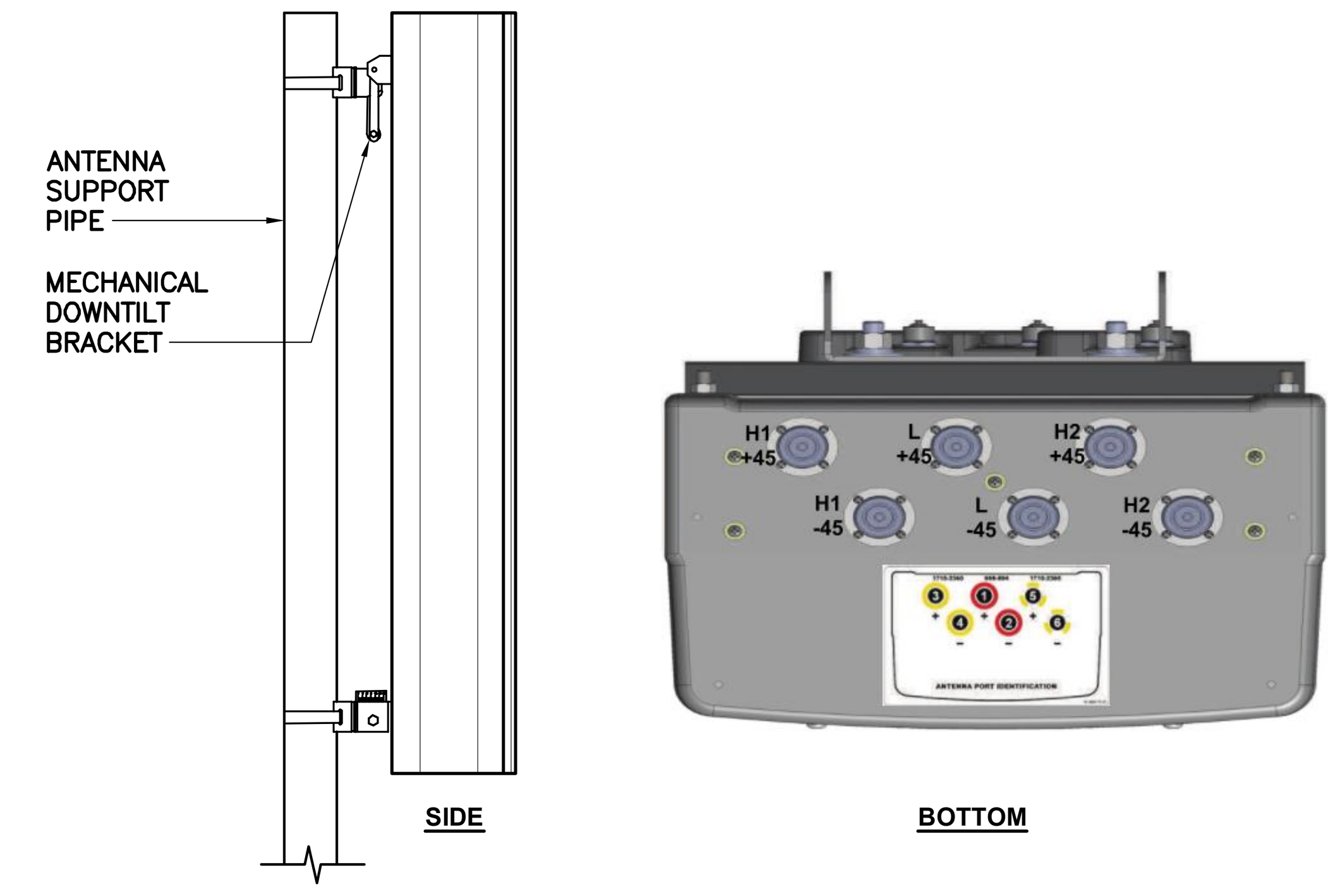
1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 (C-3) TYPICAL RRUS MOUNTING DETAILS
NOT TO SCALE



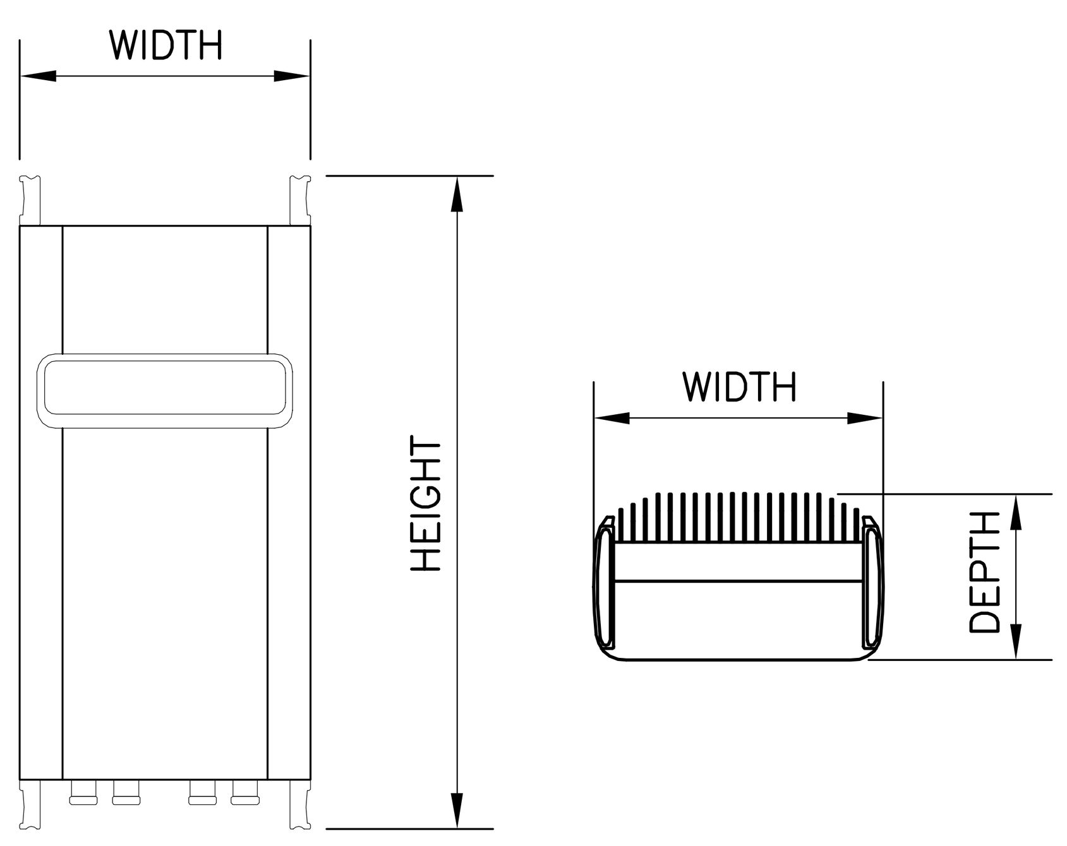
ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTEL MODEL: QS66512-2	72"L x 12"W x 9.6"D	111 LBS.

2 (C-3) PROPOSED ANTENNA DETAIL
NOT TO SCALE



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: HPA-65R-BUU-H6	72"L x 14.8"W x 9"D	72.8 LBS.

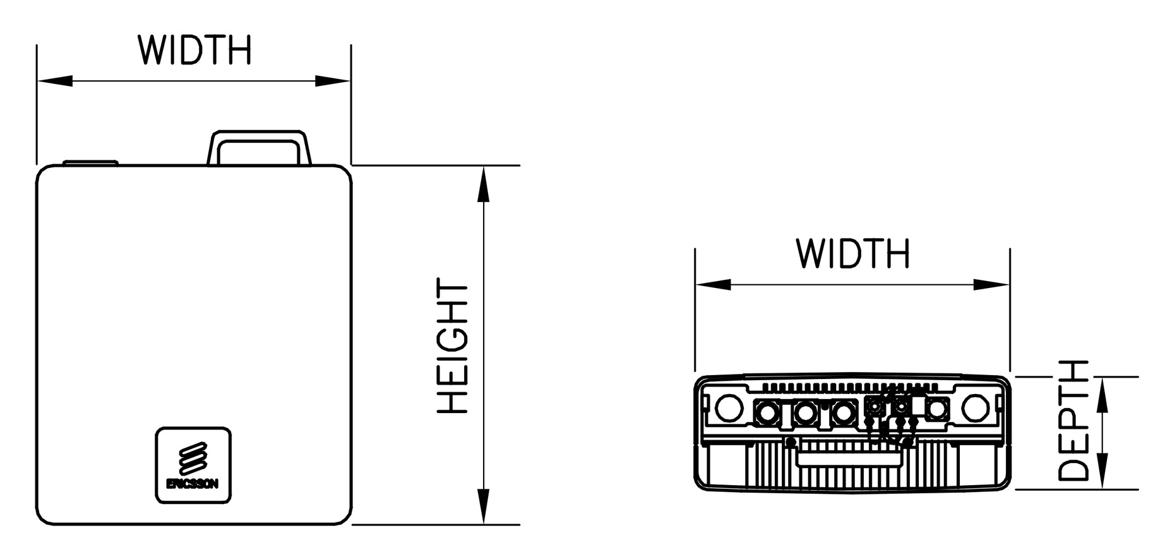
2 (C-3) PROPOSED ANTENNA DETAIL
NOT TO SCALE



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 32	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
MAKE: ERICSSON MODEL: RRUS 32 B2	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.

4 (C-3) ERICSSON RRUS 32/32 B2 DETAIL
NOT TO SCALE



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.

5 (C-3) ERICSSON B14 4478 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.

6 (C-3) KAELUS DBC0061F1V51-2 DETAIL
NOT TO SCALE

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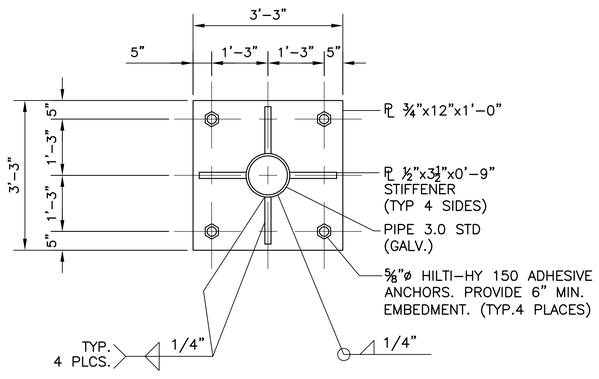
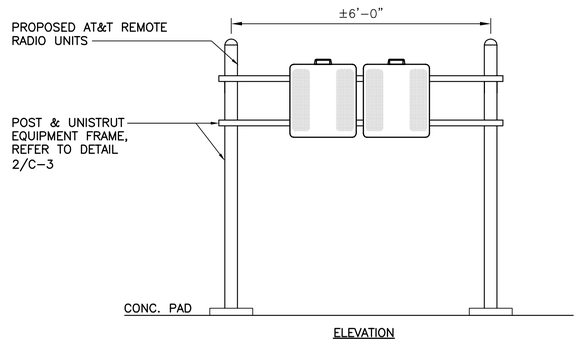
SURGE ARESSTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ANDREW MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.

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

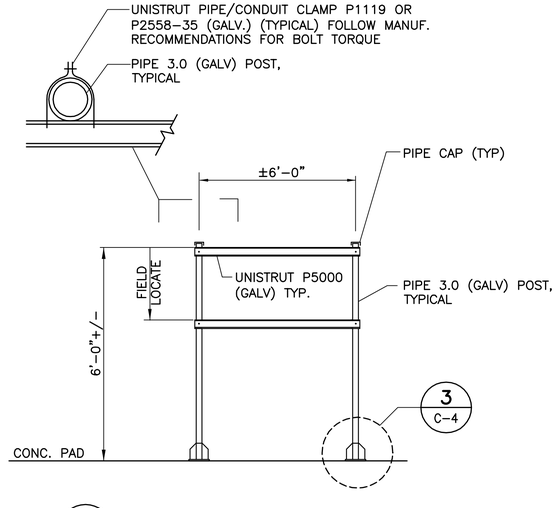
1 / C-4 **ANDREW APTDC-BDFDM-DB DETAIL**
NOT TO SCALE



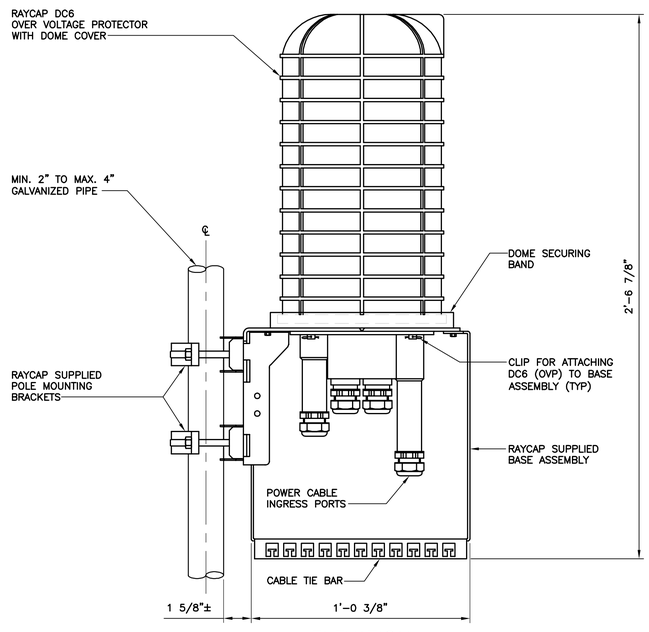
3 / C-4 **FRAME TO CONCRETE CONNECTION DETAIL**
NOT TO SCALE



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



4 / C-4 **EQUIPMENT MOUNTING FRAME DETAIL (TYP)**
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.

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

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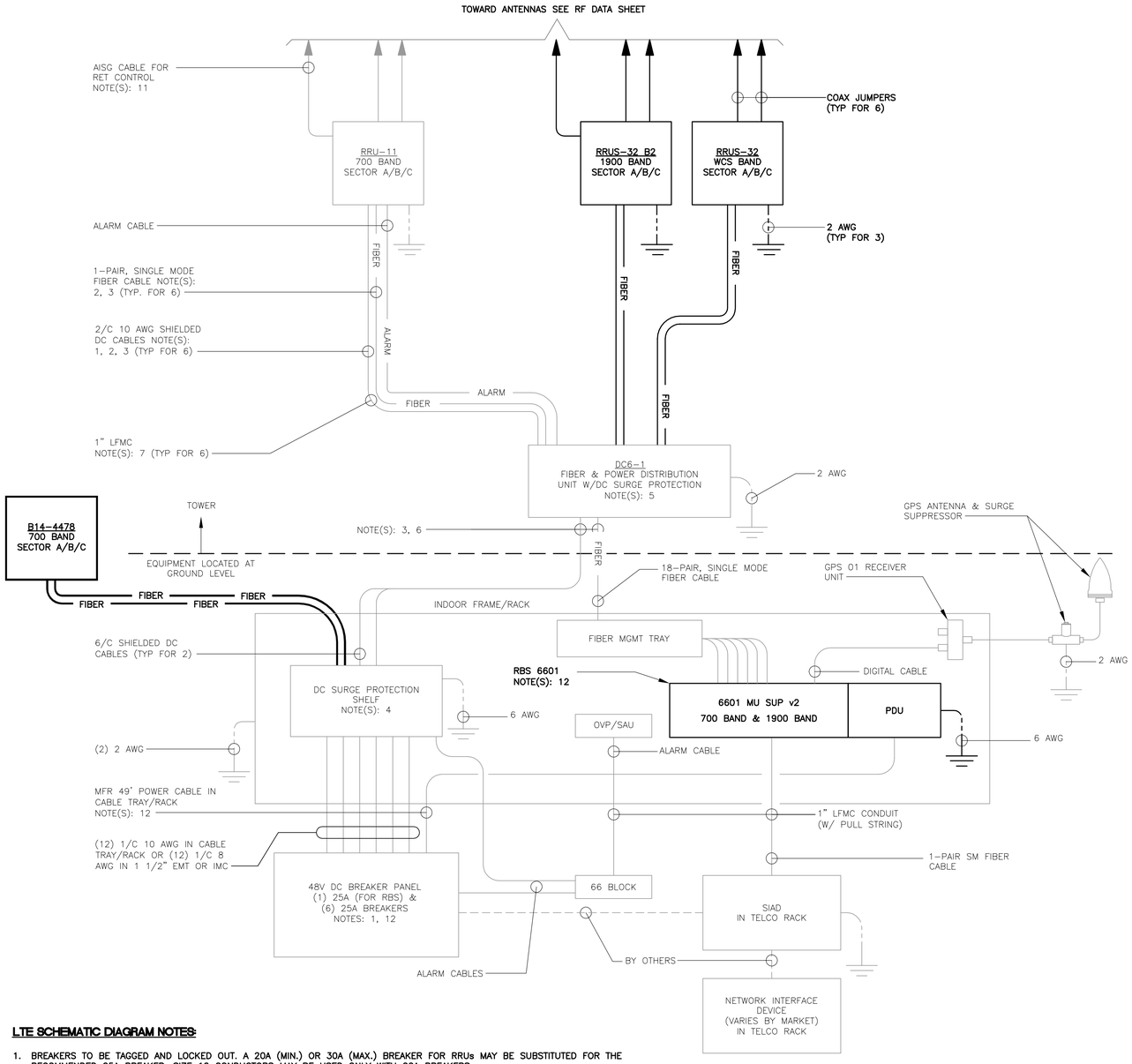


LTE SCHEMATIC DIAGRAM NOTES:

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 **LTE 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	06/22/18	DMD	CAG	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

SOUTHBURY

CT2126 - LTE 3C/4C FIRSTNET (RETROFIT)

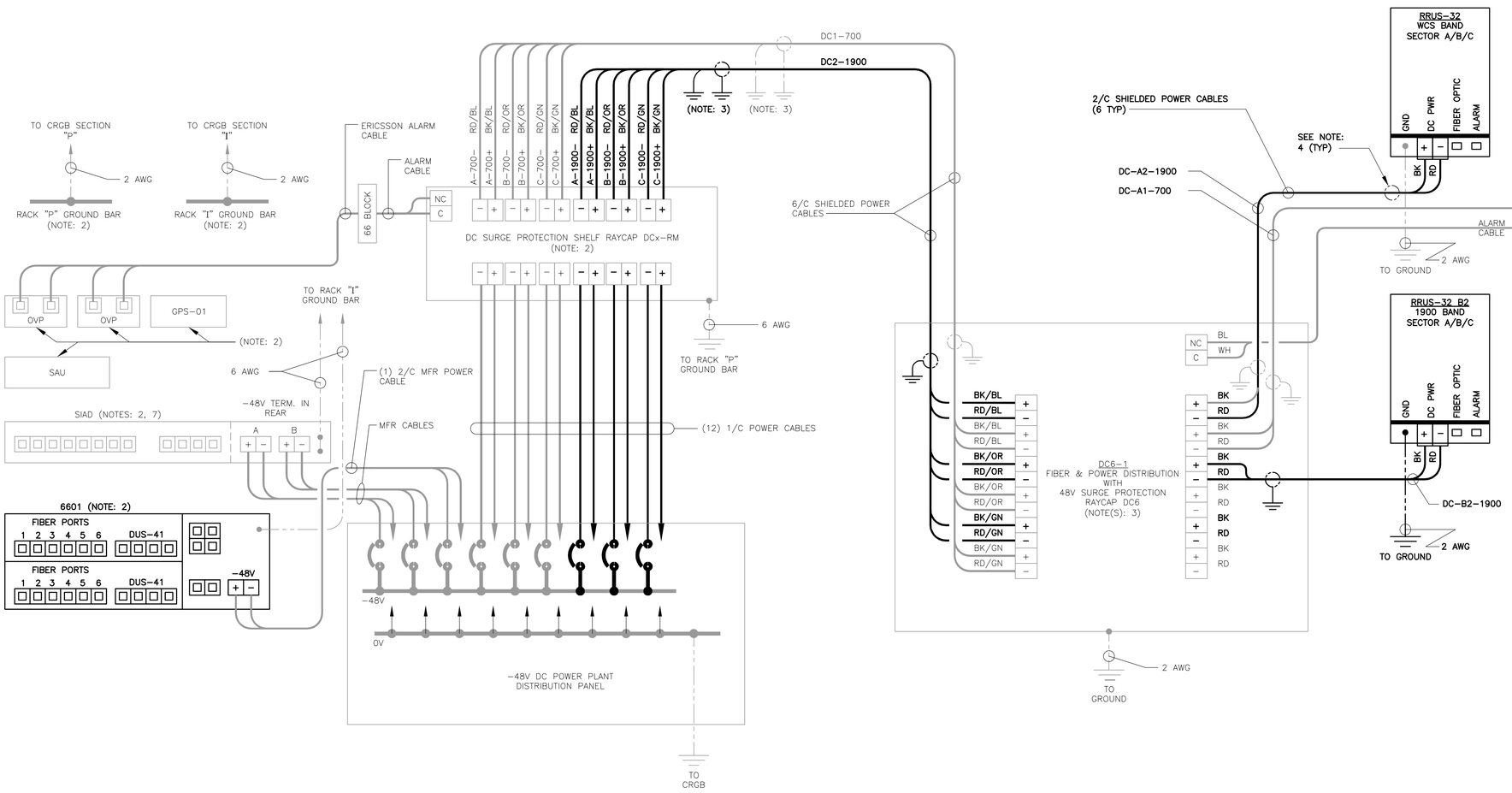
HORSE FENCE HILL ROAD
SOUTHBURY, CT 06488

DATE: 03/06/18
SCALE: AS NOTED
JOB NO. 18000.13

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 **LTE WIRING DIAGRAM**
NOT TO SCALE

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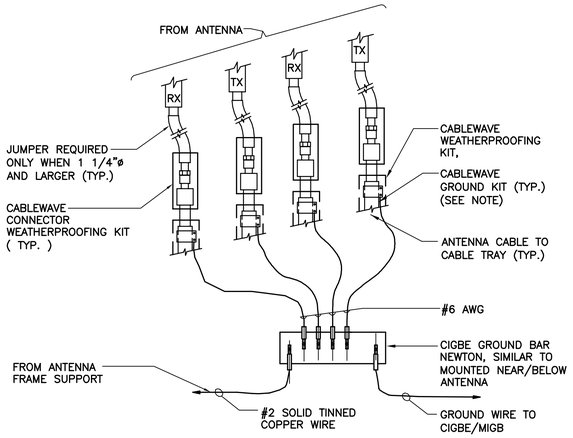
AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
SOUTHBURY
CT2126 - LTE 3C/4C FIRSTNET (RETROFIT)
HORSE FENCE HILL ROAD
SOUTHBURY, CT 06488

DATE: 03/06/18
SCALE: AS NOTED
JOB NO. 18000.13

WIRING DIAGRAM

E-2
Sheet No. 8 of 9



NOTE:

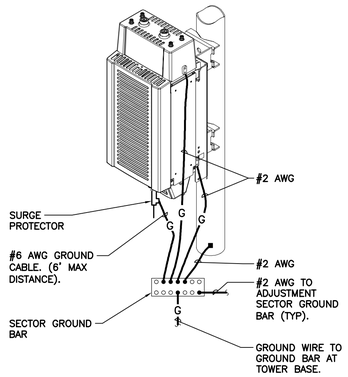
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 E-3 CONNECTION OF GROUND WIRES TO GROUND BAR

NOT TO SCALE

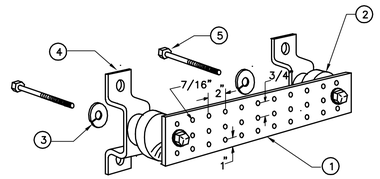
EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:

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



2 E-3 RRU POLE MOUNT GROUNDING

NOT TO SCALE

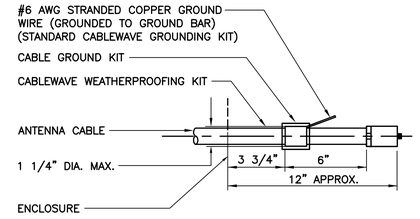


LEGEND

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

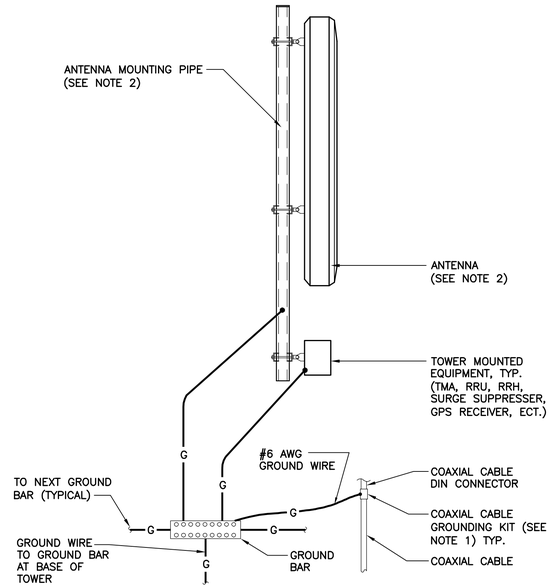
NOT TO SCALE

File: ..\..\01_RF\NEW-ENGLAND_CONNECTICUT_CTV2126_2018-LTE-N

Error! Hyperlink reference invalid.

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
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AT&T MOBILITY

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SOUTHBURY

CT2126 - LTE 3C/4C FIRSTNET (RETROFIT)

HORSE FENCE HILL ROAD
SOUTHBURY, CT 06488

DATE: 03/06/18
SCALE: AS NOTED
JOB NO. 18000.13

TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 9 of 9

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2126
FA#: 10035064

Southbury
Horse Fence Hill Road
Southbury, CT 06488

March 7, 2018

Centerline Communications Project Number: 950006-097

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.14 %**

March 7, 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: **CT2126 – Southbury**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **Horse Fence Hill Road, Southbury, 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 **Horse Fence Hill Road, Southbury, 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	700 MHz (Band 14)	4	40
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz	2	40
LTE	2300 MHz (WCS)	4	30

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	153
A	2	Quintel QS66512-2	153
A	3	CCI HPA-65R-BUU-H6	153
B	1	Powerwave 7770	153
B	2	Quintel QS66512-2	153
B	3	CCI HPA-65R-BUU-H6	153
C	1	Powerwave 7770	153
C	2	Quintel QS66512-2	153
C	3	CCI HPA-65R-BUU-H6	153

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	0.24
Antenna A2	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	8	320	5,828.47	1.34
Antenna A3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	1.12
						Sector A Composite MPE%	**2.70**
Antenna B1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.24
Antenna B2	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	8	320	5,828.47	1.34
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	1.12
						Sector B Composite MPE%	**2.70**
Antenna C1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.24
Antenna C2	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	8	320	5,828.47	1.34
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	1.12
						Sector C Composite MPE%	**2.70**

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	**2.70 %**
Verizon Wireless	3.44 %
PageNet	0.00 %
Site Total MPE %:	**6.14 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	2.70 %
AT&T Sector B Total:	2.70 %
AT&T Sector C Total:	2.70 %
Site Total:	6.14 %

Table 5: Site MPE Summary

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

AT&T _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS (Antenna 1)	2	414.12	153	1.38	850 MHz	567	0.24%
AT&T 700 MHz LTE – Band 14 (Antenna 2)	4	486.47	153	3.24	700 MHz	467	0.69%
AT&T 1900 MHz (PCS) LTE (Antenna 2)	4	970.64	153	6.46	1900 MHz (PCS)	1000	0.65%
AT&T 700 MHz LTE (Antenna 3)	2	626.70	153	2.09	700 MHz	467	0.45%
AT&T 2300 MHz (WCS) LTE (Antenna 3)	4	1,004.90	153	6.69	2300 MHz (WCS)	1000	0.67%
						Total:	**2.70%**

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:	2.70 %
Sector B:	2.70 %
Sector C:	2.70 %
AT&T Maximum Total (per sector):	2.70 %
Site Total:	6.14 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.14 %** 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

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501 Main Street South
Town of Southbury Planning
Southbury, CT 06488

9590 9402 3535 7305 4987 61

2. Article Number *(Transfer from service label)*
7016 3010 0000 7829 1322

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
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1. Article Addressed to:

Mark D. Cody
501 Main Street South
Town of Southbury Building
Southbury, CT 06488

9590 9402 3535 7305 4988 46

2. Article Number *(Transfer from service label)*
7016 3010 0000 7829 1339

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X [signature] ☐ Agent ☐ Addressee

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3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
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- ☐ Collect on Delivery
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- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
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1. Article Addressed to:

Smith Lynn Revocable Family Trust
PO Box 747
Southbury, CT 06488

9590 9402 1864 6104 9544 11

2. Article Number *(Transfer from service label)*
7016 3010 0000 7829 1223

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Patricia Hamm C. Date of Delivery 7-31-18

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®
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- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
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- ☐ Registered Mail™
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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. Jeff Manville
501 Main Street South
Town of Southbury First Selectman
Southbury, CT 06488

9590 9402 3535 7305 4988 15

2. Article Number *(Transfer from service label)*
7016 3010 0000 7829 1216

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ 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:

Ryan Tierney, Account Project Manager
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

9590 9402 3315 7196 6104 48

2. Article Number *(Transfer from service label)*
7016 3010 0000 7829 1301

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☑ Agent ☐ Addressee

B. Received by *(Printed Name)* [illegible] Arch | C. Date of Delivery 7-9

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