smartlink

EM-AT&T-031-170428

April 25, 2017

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

Re: **Notice of Exempt Modification – Antenna Swap**
Property Address: **36 Mohawk Mountain, Cornwall, CT 06753**
Applicant: **AT&T Mobility, LLC**

Dear Ms. Bachman:

On behalf of AT&T, please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 65-feet on an existing 65-foot self-support tower, owned by American Tower Corporation at 36 Mohawk Mountain, Cornwall, CT 06753. AT&T now intends to replace (2) KMW AM-X-CD-16-65-00T-RET on Alpha / Beta with CCI HPA-65R-BUU-H6 , (1) Kathrein 80010764 on Gamma with Andrew SBNHH-1D65A and install (3) NEW RRUS-32 B2 UNITS.

The following is a list of subsequent decisions by the Connecticut Siting Council as an initial decision by the Council or City could not be obtained regarding the approval of the aforementioned structure. Due diligence was performed and back up documentation will be provided with this filing:

Per Karen Griswold Nelson ZEO and LUA, Town of Cornwall, Ct the current telecommunications facility predates zoning and in fact was a fire tower. It is located on state owned land and has never required any approvals from this office that would have triggered any local zoning or permitting. See attached email.

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The following is a subsequent decision by the Connecticut Siting Council:

EM-CING-031-021030 - Southwestern Bell Mobile Systems, LLC d/b/a Cingular Wireless notice of intent to modify an existing telecommunications facility located at 36 Mohawk Mountain, Cornwall, Connecticut.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5l0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent First Selectman: Gordon M. Ridgway Town Hall 26 Pine Street P.O. Box 97Cornwall, CT 06753 and Karen Nelson Administrator, Zoning Enforcement Officer. A copy of this letter is also being sent to American Tower Corporation-Tower Owner- at 116 Huntington Ave., 11th floor, Boston, MA 02116 and the State of Connecticut 79 elm St. Hartford, Ct 06034.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 65-foot level of the 65-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

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

Sincerely,

David Barbagallo

Enclosures
CC w/enclosures:

First Selectman: Gordon M. Ridgway
Karen Nelson Administrator, Zoning Enforcement
American Tower Corporation-Tower Owner
State of Connecticut – Land Owner.

David Barbagallo

From: Cornwall Land Use <cwlanduse@optonline.net>
Sent: Wednesday, March 08, 2017 6:11 AM
To: Michael Pattison
Subject: RE: CTL01025 - AT&T Cell Site located at 36 Mohawk Mountain, Cornwall, CT 06753

Mr. Pattison. As relating to the Mohawk Mountain cell facility, I am unable to locate any local approvals. It is my understanding that the current telecommunications facility predates zoning and in fact, was once the site used for spotting enemy aircraft during World War II as well as being a fire tower. It is located on state owned land and has never required any approvals from this office that would have triggered any local permitting. I hope that this answers your questions. If the Connecticut Siting Counsel has any additional questions, they should be directed to this office.

Karen Griswold Nelson
ZEO and LUA, Town of Cornwall

Land Use Office P&Z, ZBA, IWWA Tele 672-4957 fax 672-4069 cwlanduse@optonline.net Tuesday and Thursday 9AM to noon P.O. Box 97 Cornwall, CT 06753

On Tue, Mar 07, 2017 at 11:19 AM, Michael Pattison wrote:

Hello Karen,

We just spoke on the phone regarding the original zoning decision for this site. If you can please send me an email explaining that you were unable to locate the original decision I would greatly appreciate it.

Thank You!

Michael Pattison | Real Estate Specialist

Smartlink

(m) 781-290-9276

michael.pattison@Smartlinkllc.com

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Follow Us on Twitter

Connect with Us on LinkedIn

Proud Sponsor of the Chesapeake Bayhawks, 5-Time Major League Lacrosse Champions! www.thebayhawks.com

Property Location: GREAT HOLLOW RD | MAP ID: E06/ 03/ 06E/ / | Bldg Name: | State Use: 5-1

Vision ID: 1265 | Account #98106020 | Bldg #: 1 of 1 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 08/02/2016 10:14

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
CONNECTICUT STATE OF				
79 ELM ST				
HARTFORD, CT 06134				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:
CENSUS TRAC 2632
SURVEY #

GIS ID: | ASSOC PID#

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
VAC RS LN	5-1	563,900	394,800
FOREST	6-2	4,091,600	245,500
		Total	4,655,500	640,300

6031
CORNWALL, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
CONNECTICUT STATE OF	043/ 472	10/01/1963				

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	5-1	394,800	2010	5-1	656,310	2007	5-1	8,802,990
2015	6-2	133,000	2010	6-2	194,350	2007	6-2	193,120
		Total: 527,800			Total: 850,660			Total: 8,996,110

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	563,900
Special Land Value	4,091,600
Total Appraised Parcel Value	4,655,500
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	4,655,500

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD NAME	STREET INDEX NAME	TRACING	BATCH
0001/A				

NOTES

LAND FOR SKI AREA
2009 CORR AC PER GIS & DEP

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
6246	09/15/2000	RP	Repair	10,000		0		
6247	09/15/2000	AD	Addition	15,000		0		

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Frontage	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	Adj. Unit Price	Land Value
1	5-1	VAC LAND	R-5				5.00	AC	336,000.00	0.28	A	1.0000	1.00		0.00	SKI AREA			470,100
1	6-2	FOREST LND	R-5				1,461.30	AC	10,000.00	1.00	0	0.2800	1.00		0.00		490:240		4,091,600
1	5-1	VAC LAND	R-5				6.70	AC	10,000.00	5.00	0	0.2800	1.00		0.00	DEVELOPED SKI SLOPES			93,800

Total Card Land Units: 1,473.00 AC | Parcel Total Land Area: 1473 AC | Total Land Value: 4,655,500

Property Location: GREAT HOLLOW RD | *MAP ID:* E06/ 03/ 06E/ / | *Bldg Name:* | *State Use:* 5-1

Vision ID: 1265 | *Account* #98106020 | *Bldg #:* 1 of 1 | *Sec #:* 1 *of* 1 | *Card* 1 *of* 1 | *Print Date:* 08/02/2016 10:14

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Model	00		Vacant

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
5-1	VAC LAND	100

COST/MARKET VALUATION

Adj. Base Rate:	0.00
Replace Cost	0
AYB	
EYB	0
Dep Code	
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	
Apprais Val	
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
	Ttl. Gross Liv/Lease Area:	0	0			

No Photo On Record

Property Location: GREAT HOLLOW RD | MAP ID: E06/ 03/ 06E/ / | Bldg Name: | State Use: 5-1

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1	5-1	VAC LAND	R-5				6.70	AC	10,000.00	5.00	0	0.2800	1.00		0.00	DEVELOPED SKI SLOPES			93,800

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Element	Cd.	Ch.	Description
Model	00		Vacant

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
5-1	VAC LAND	100

COST/MARKET VALUATION

Adj. Base Rate:	0.00
Replace Cost	0
AYB	
EYB	0
Dep Code	
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	
Apprais Val	
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
	Ttl. Gross Liv/Lease Area:	0	0			

No Photo On Record

SITESAFE
RF COMPLIANCE EXPERTS
A BUSINESS OF FDH VELOCITEL

200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com

Smartlink LLC on behalf of AT&T Mobility, LLC
Site FA – 10035044
Site ID – CTV1025 (2C)
USID – 71288
Site Name – Cornwall
Site Compliance Report

36 Mohawk Mountain
Cornwall, CT 06753

Latitude: N41-49-16.64
Longitude: W73-17-47.18
Structure Type: Self-Support

Report generated date: February 28, 2017
Report by: Kevin Bernstetter II, EI
Customer Contact: Romina Kirchmaier

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

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	Unknown
RF Sign(s) @ antennas	Unknown
Barrier(s) @ sectors	None
Max cumulative simulated RFE level on the Ground	<1% General Public Limit at Ground Level
FCC & AT&T Compliant?	Will be compliant

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

RFDS: NEW-ENGLAND_CONNECTICUT_CTV1025_2016-LTE-Next-Carrier_LTE-2C_mm093q_PTN_10035044_71288_03-10-2016_Preliminary-Approved_v1.00v

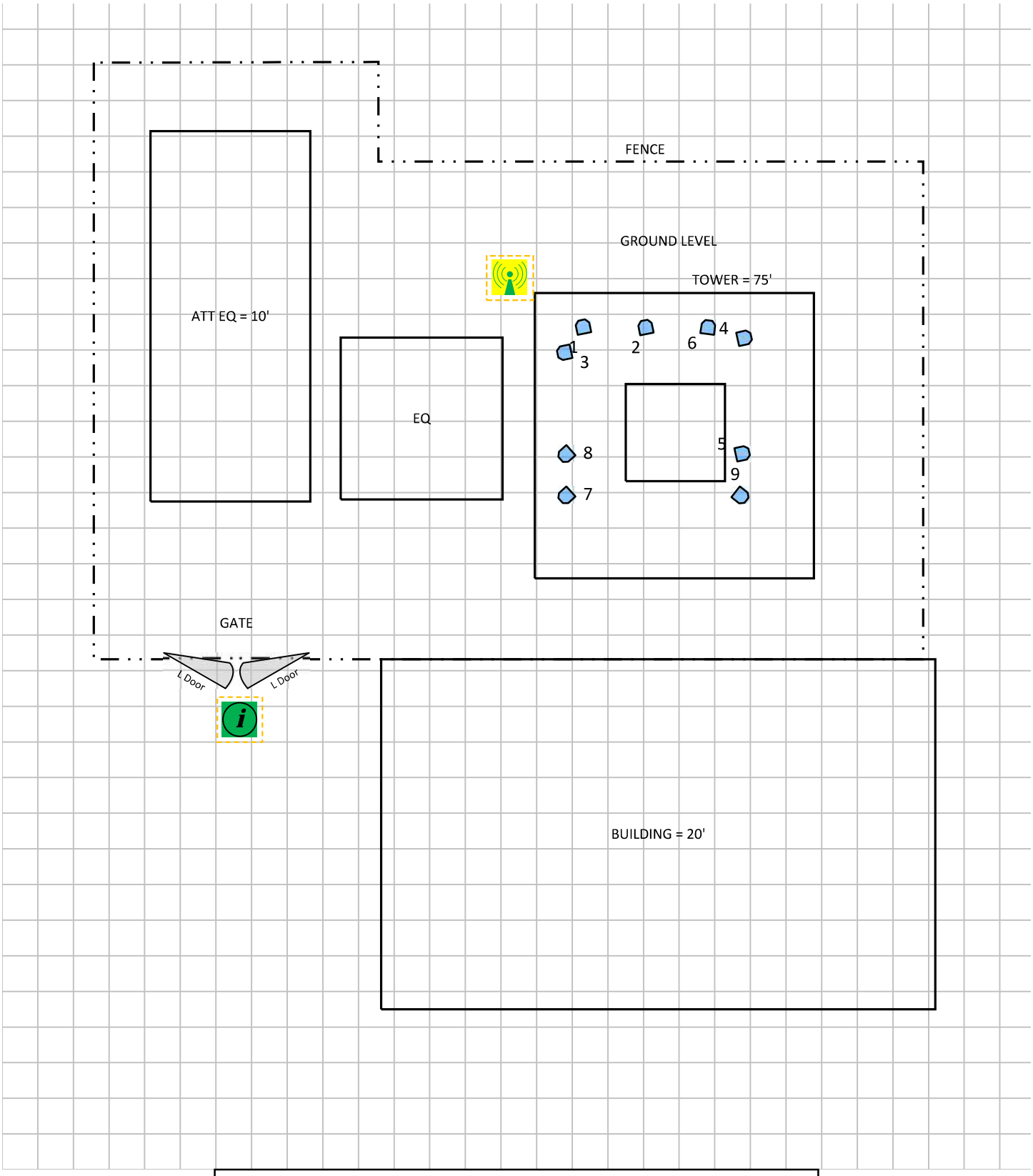
CD's: 10035044_AE201_160922_CTL01025_REV1

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- Elevation View

Site Scale Map For: Cornwall



(Feet)

0 4.8 9.6

www.sitesafe.com
Site Name:Cornwall
2/28/2017 12:25:12 PM

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Info 1 | Info 2

Barrier

Proposed Barriers/ Signs

3 Antenna Inventory

The following antenna inventory on this and the following page, were obtained by the customer and were utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	141	82	4.6	11.51	0	1	0	334.2	42.3'	63.6'	62.7'
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	141	86	4.6	13.41	0	1	0	427.6	42.3'	63.6'	62.7'
2	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	141	82	4.6	11.51	1	0	0	160.9	46.7'	63.6'	62.7'
3	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H6	Panel	737	51	66.2	6	11.68	0	0	1	827.9	41'	61.8'	62'
3	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H6	Panel	2100	51	61.1	6	14.53	0	0	1	2152.8	41'	61.8'	62'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	256	82	4.6	11.51	0	1	0	334.2	53.6'	62.9'	62.7'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	256	86	4.6	13.41	0	1	0	427.6	53.6'	62.9'	62.7'
5	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	256	82	4.6	11.51	1	0	0	143.2	53.5'	54.8'	62.7'
6	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H6	Panel	737	161	66.2	6	11.68	0	0	1	827.9	51'	63.6'	62'
6	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H6	Panel	2100	161	61.1	6	14.53	0	0	1	2152.8	51'	63.6'	62'
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	21	82	4.6	11.51	0	1	0	334.2	41.1'	51.8'	62.7'
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	21	86	4.6	13.41	0	1	0	427.6	41.1'	51.8'	62.7'
8	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	21	82	4.6	11.51	1	0	0	143.2	41.1'	54.7'	62.7'
9	AT&T MOBILITY LLC (Proposed)	Andrew SBNHH-1D65A	Panel	737	281	66	4.6	11.29	0	0	1	629.5	53.4'	51.8'	62.7'
9	AT&T MOBILITY LLC (Proposed)	Andrew SBNHH-1D65A	Panel	2100	281	62	4.6	14.6	0	0	1	233	53.4'	51.8'	62.7'

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

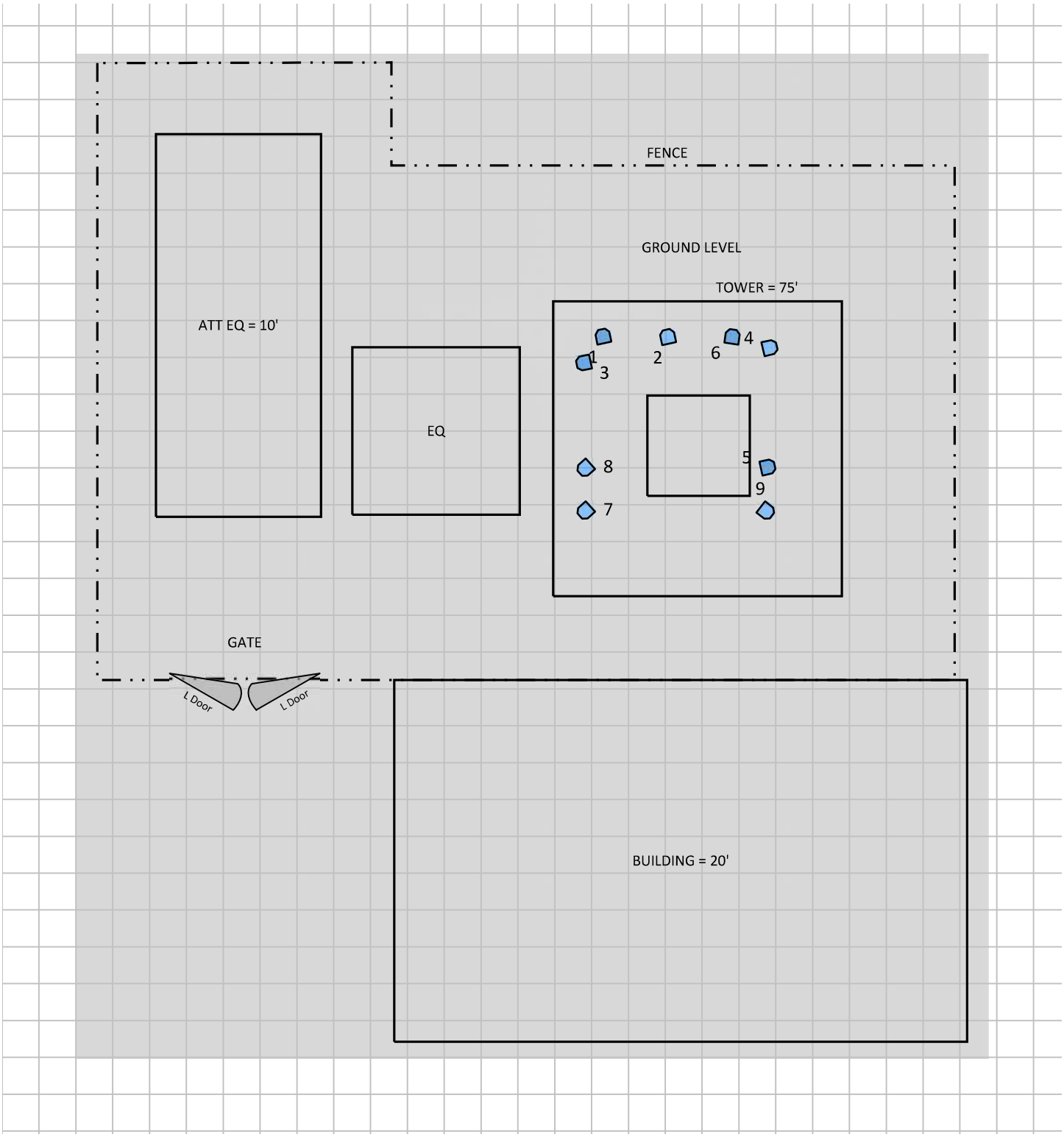
Note: Other operators exist on site but were not considered for this modeling as Sitesafe had no information on them.

4 Emission Predictions

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

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Cornwall



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

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Info 1 | Info 2

Barrier

Proposed Barriers/ Signs

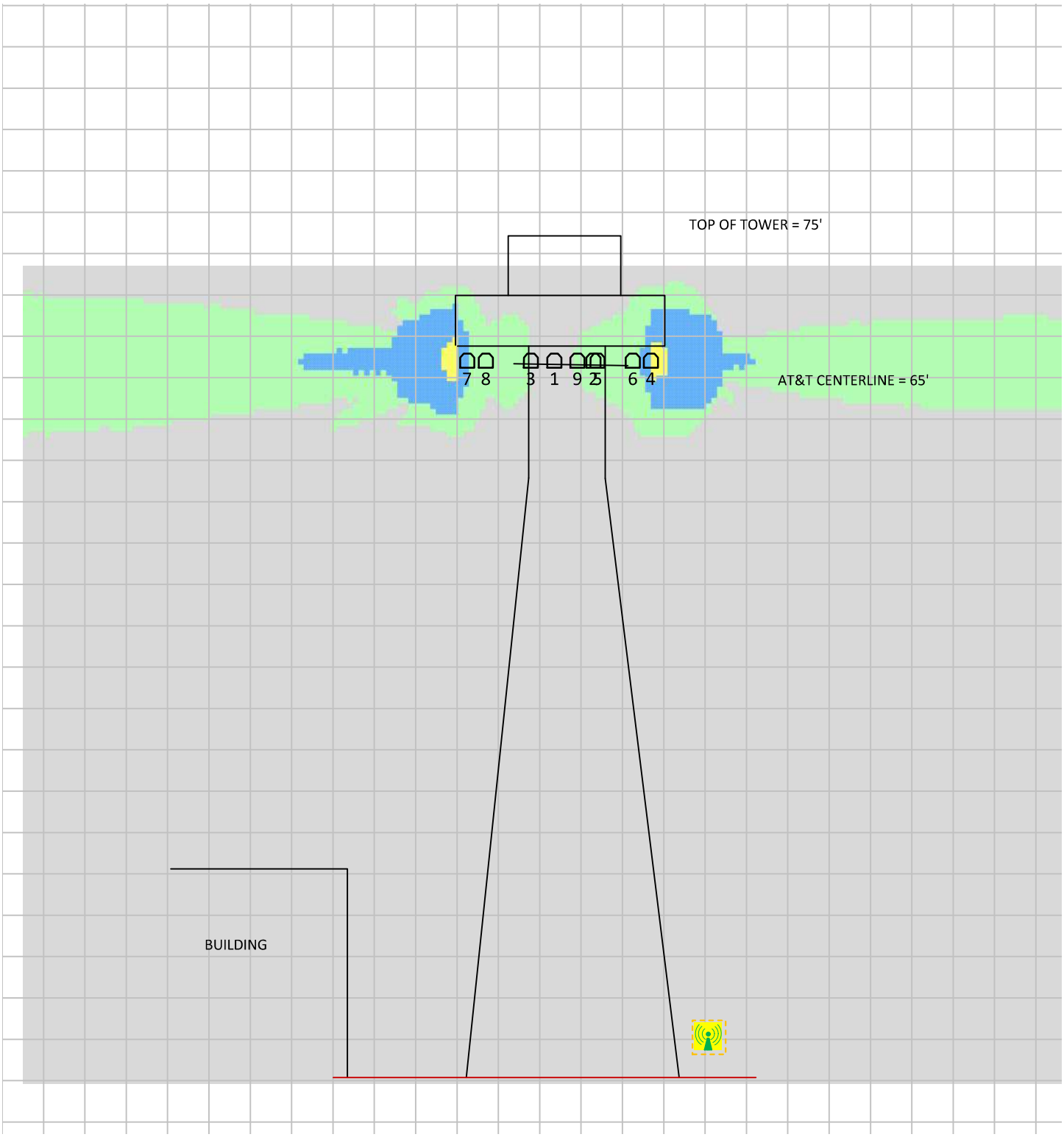
(Feet)

0 5.1 10.2

www.sitesafe.com
Site Name:Cornwall
2/28/2017 12:25:45 PM

SitesafeTC Version:1.0.0.0 - 0.0.0.257
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Cornwall
Elevation View



% of FCC Public Exposure Limit

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Info 1 | Info 2

Barrier

Proposed Barriers/ Signs

(Feet)

0 6.4 12.8

www.sitesafe.com
Site Name:Cornwall
2/28/2017 12:20:06 PM

SitesafeTC Version:1.0.0.0 - 0.0.0.257
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

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

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

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

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

5.2 Actions for Site Compliance

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

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

Site Access Location

Yellow caution 2 sign required.

Gate Location

Information 1 sign required.

Notes:

- Signage may already exist on site. Sitesafe is recommending as a worst case scenario.

6 Reviewer Certification

The Reviewer whose signature appears below hereby certifies and affirms:

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

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

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Kevin Bernstetter II, EI.

February 28, 2017

Donna Guevarra

Appendix A – Statement of Limiting Conditions

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

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

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

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

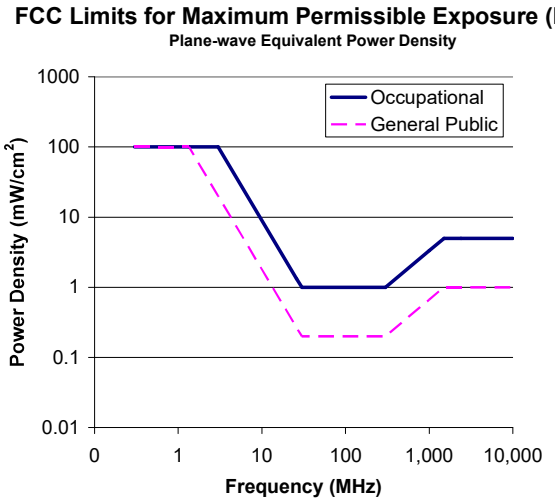
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible*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

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

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

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

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



Limits for Occupational/Controlled Exposure (MPE)

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

Limits for General Population/Uncontrolled Exposure (MPE)

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

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

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

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

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

Appendix C – Safety Plan and Procedures

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

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

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

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

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

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

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

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

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

Appendix D – RF Emissions

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

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

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

Appendix E – Assumptions and Definitions

General Model Assumptions

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

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

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

Use of Generic Antennas

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

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

Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix F – References

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

Sitesafe, Inc.
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-ionising Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Losses	Input Power
1	AT&T MOB	850	23.60513	1	0			23.60513
1	AT&T MOB	1900	19.49831	1	0			19.49831
2	AT&T MOB	850	11.36394	1	0			11.36394
3	AT&T MOB	737	56.23412	1	0			56.23412
3	AT&T MOB	2100	75.85777	1	0			75.85777
4	AT&T MOB	850	23.60513	1	0			23.60513
4	AT&T MOB	1900	19.49831	1	0			19.49831
5	AT&T MOB	850	10.11517	1	0			10.11517
6	AT&T MOB	737	56.23412	1	0			56.23412
6	AT&T MOB	2100	75.85777	1	0			75.85777
7	AT&T MOB	850	23.60513	1	0			23.60513
7	AT&T MOB	1900	19.49831	1	0			19.49831
8	AT&T MOB	850	10.11517	1	0			10.11517
9	AT&T MOB	737	46.7735	1	0			46.7735
9	AT&T MOB	2100	8.080529	1	0			8.080529

StartSymbolData

Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain
	Powerwav	7770	42.27	63.63	62.7085	Panel	4.583	11.51
	Powerwav	7770	42.27	63.63	62.7085	Panel	4.583	13.41
	Powerwav	7770	46.65	63.6	62.7085	Panel	4.583	11.51
	CCI Antenn	HPA-65R-B	40.95	61.81	62	Panel	6	11.68
	CCI Antenn	HPA-65R-B	40.95	61.81	62	Panel	6	14.53
	Powerwav	7770	53.59	62.85	62.7085	Panel	4.583	11.51
	Powerwav	7770	53.59	62.85	62.7085	Panel	4.583	13.41
	Powerwav	7770	53.45	54.75	62.7085	Panel	4.583	11.51
	CCI Antenn	HPA-65R-B	51.04	63.6	62	Panel	6	11.68
	CCI Antenn	HPA-65R-B	51.04	63.6	62	Panel	6	14.53
	Powerwav	7770	41.05	51.75	62.7085	Panel	4.583	11.51
	Powerwav	7770	41.05	51.75	62.7085	Panel	4.583	13.41
	Powerwav	7770	41.05	54.65	62.7085	Panel	4.583	11.51
	Andrew	SBNHH-1D	53.35	51.75	62.7085	Panel	4.583	11.29
	Andrew	SBNHH-1D	53.35	51.75	62.7085	Panel	4.583	14.6

BWdth Pt Dir	Uptime Profile	ON flag
82;141	100%	ON•
86;141	100%	ON•
82;141	100%	ON•
66.2;51	100%	ON•
61.1;51	100%	ON•
82;256	100%	ON•
86;256	100%	ON•
82;256	100%	ON•
66.2;161	100%	ON•
61.1;161	100%	ON•
82;21	100%	ON•
86;21	100%	ON•
82;21	100%	ON•
66;281	100%	ON•
62;281	100%	ON•

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Structural Analysis Report

Structure	:	**65 ft Self Supported Tower**
ATC Site Name	:	**Cornwall CT, CT**
ATC Site Number	:	**88009**
Engineering Number	:	**OAA700092_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Cornwall**
Carrier Site Number	:	**CTL01025 / 10035044**
Site Location	:	**Mohawk Mtn.** **LItchfield, CT 06759-4232** **41.821300,-73.296400**
County	:	**Litchfield**
Date	:	**April 11, 2017**
Max Usage	:	**100%**
Result	:	**Pass**

Prepared By:
Tsega Melesse, E.I.
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
WILLIAM GARRETT
No. 23235
LICENSED
PROFESSIONAL ENGINEER

Apr 11 2017 5:54 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 65 ft self supported tower to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	CSEI ATC Engineering #26472221, dated September 19, 2006
Foundation Drawing	TEP Project #74252-101870, dated November 22, 2016
Geotechnical Report	FDH Project #16PWAQ1600, dated November 30, 2016

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, Vasd) / 120 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	40 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:	214 ft
Spectral Response:	Ss = 0.18, 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					
69.0	75.0	1	12' Dipole	Leg	-	--
	72.0	1	6' Omni			
	69.0	3	RFS APXVSPP18-C-A20		(3) 1 1/4" Hybriflex (1) 1 1/4" Fiber	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	Alcatel-Lucent 800MHz RRH			
		3	Alcatel-Lucent RRH2x40 (700)			
65.0	65.0	1	Andrew ABT-DFDM-ADB	Sector Frames	(12) 1 1/4" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk	AT&T Mobility
		1	Andrew SBNHH-1D65A (33.5 lbs)			
		2	CCI HPA-65R-BUU-H6			
		1	Raycap DC6-48-60-18-8F			
		6	Powerwave 7770.00A			
		6	Powerwave TT19-08BP111-001			
		3	Ericsson RRUS 11 (Band 12)			
63.0	72.0	1	18' Omni	Leg	(2) 7/8" Coax	US Dept Of Homeland Security
	63.0	1	Sinclair SV228-HF2SNM			
57.0	57.0	3	RFS RFS APXV9TM14-ALU-I20	Stand-Offs	(3) 1 1/4" Hybriflex	Sprint Nextel
		3	RFS APXVSPP18-C-A20			
56.0	56.0	3	Commscope LNX-6515DS-A1M (50.3 lb)	T-Arms	(2) 1 5/8" Hybriflex (1) 1/2" Coax	T-Mobile
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Ericsson RRUS 11 B2			
		3	Ericsson RRUS 11 B4			
		3	Ericsson RRUS 11 B12			
		1	Symmetricom 58532A			
55.0	55.0	1	10' Std. Dish	Leg	(1) 7/8" Coax	--
		3	10' HP Dish			
50.0	50.0	-	-	Empty Platfrom w/ Handrails	-	
48.0	48.0	3	Decibel 776QNB120EXM	Leg	(12) 7/8" Coax (3) 1/2" Coax	Alltel
46.0	46.0	3	Antel BXA-70063-6CF-EDIN-X	Leg	(12) 1 5/8" Coax	
		6	Antel LPA-80063/6CF			
		3	Antel BXA-171063/12CF__2 FP			
		6	RFS FD9R6004/2C-3L (3.1 lbs)			
37.5	37.5	-	-	Access Platform	-	-

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
65.0	65.0	3	Ericsson RRUS 11 w/ RRUS A2	-	-	AT&T Mobility

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
65.0	65.0	3	Ericsson RRUS 32 (50.8 lbs)	Sector Frames	-	AT&T Mobility

[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).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	59%	Pass
Diagonals	100%	Pass
Horizontals	31%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-ft)	95.0	35%
Axial (Kips)	116.9	4%
Shear (Kips)	26.0	24%

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, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
65.0	Ericsson RRUS 32 (50.8 lbs)	AT&T Mobility	0.170	0.024	0.575
63.0	Sinclair SV228-HF2SNM	US Dept of Homeland			
55.0	10' HP Dish	--	0.092	0.026	0.915
	10' Std. Dish				

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

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Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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 we supply.

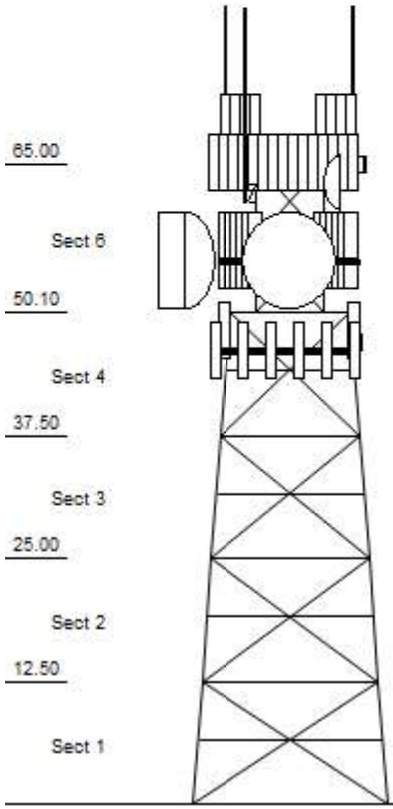
Loads: 93 mph no ice
40 mph w/ 3/4" radial ice
Site Class: D Ss: 0.18 S1: 0.06
60 mph Serviceability

Job Information

Tower :	88009	Location :	CORNWALL CT, CT
Code :	ANSI/TIA-222-G	Shape : Square	Base Width : 20.00 ft
Client :	AT&T MOBILITY		Top Width : 7.00 ft

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1 - 2	SAE 33 ksi	6X6X0.625	SAU 36 ksi 4X3X0.25	DAL 36 ksi 3X2.5X0.25
3	SAE 33 ksi	6X6X0.5	SAU 36 ksi 3.5X3X0.25	DAL 36 ksi 3.5X3X0.3125
4	SAE 33 ksi	6X6X0.5	SAE 36 ksi 3.5x3.5x0.25	DAL 36 ksi 3.5X3X0.3125
5	SAE 33 ksi	6X6X0.5		
6	SAE 33 ksi	6X6X0.5	SAU 36 ksi 3X2X0.25	DAL 36 ksi 2.5X2X0.25



Discrete Appurtenance

Elev (ft)	Type	Qty	Description
69.00	Panel	3	RFS APXVSPP18-C-A20
69.00	Panel	3	Alcatel-Lucent TD-RRH8x20-25 w
69.00	Panel	3	Alcatel-Lucent 800 MHz RRH
69.00	Panel	3	Alcatel-Lucent RRH2x40 (700)
69.00	Whip	1	6' Omni
69.00	Whip	1	12' Dipole
65.01	Other	1	Fire Warden Cab
65.00	Panel	3	Ericsson RRUS 32 (50.8 lbs)
65.00	Mounting Frame	3	Round Sector Frame
65.00	Panel	1	Andrew ABT-DFDM-ADB
65.00	Panel	1	Andrew SBNHH-1D65A (33.5 lbs)
65.00	Panel	2	CCI HPA-65R-BUU-H6
65.00	Panel	1	Raycap DC6-48-60-18-8F
65.00	Panel	6	Powerwave Allgon 7770.00A
65.00	Panel	6	Powerwave Allgon TT19-08BP111-
65.00	Panel	3	Ericsson RRUS 11 (Band 12)
63.00	Whip	1	18' Omni
63.00	Dish	1	Sinclair SV228-HF2SNM
57.00	Panel	3	RFS RFS APXV9TM14-ALU-I20
57.00	Panel	3	RFS APXVSPP18-C-A20
57.00	Straight Arm	6	Stand-Off
56.00	Panel	3	Commscope LNX-6515DS-A1M
56.00	Panel	3	RFS APX16DWV-16DWVS-E-A20
56.00	Panel	3	Ericsson RRUS 11 B2
56.00	Panel	3	Ericsson RRUS 11 B4
56.00	Panel	3	Ericsson RRUS 11 B12
56.00	Panel	1	Symmetricom 58532A
56.00	Straight Arm	3	Flat T-Arm
55.00	Dish	1	10' Std. Dish
55.00	Dish	3	10' HP Dish
50.00	Platform	1	Platfrom w/ Handrails
48.00	Panel	3	Decibel 776QNB120EXM
46.00	Panel	3	Amphenol Antel BXA-70063-6CF-E
46.00	Panel	6	Antel LPA-80063/6CF
46.00	Panel	3	Antel BXA-171063/12CF__2 FP
46.00	Panel	6	RFS FD9R6004/2C-3L (3.1 lbs)
37.50	Platform	1	Access Platform

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.00	69.00	3	1 1/4" Hybriflex Cab
0.00	69.00	1	1 1/4" Fiber
0.00	65.00	1	Waveguide
0.00	65.00	1	Climbing Ladder
0.00	65.00	12	1 1/4" Coax
0.00	65.00	2	0.78" (19.7mm) 8 AWG
0.00	65.00	1	0.39" (10mm) Fiber T
0.00	63.00	1	7/8" Coax
0.00	63.00	1	7/8" Coax
0.00	57.00	3	1 1/4" Hybriflex Cab

Job Information

Tower : 88009	Location : CORNWALL CT, CT		
Code : ANSI/TIA-222-G	Shape : Square	Base Width : 20.00 ft	
Client : AT&T MOBILITY		Top Width : 7.00 ft	

0.00	56.00	1	Waveguide
0.00	56.00	1	1/2" Coax
0.00	56.00	2	1 5/8" Hybriflex Cab
0.00	55.00	1	7/8" Coax
0.00	48.00	12	7/8" Coax
0.00	48.00	3	1/2" Coax
0.00	46.00	12	1 5/8" Coax

Global Base Foundation Design Loads

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	2,953.44	49.79	63.30
DL + WL + IL	718.60	144.96	14.83

Individual Base Foundation Design Loads

Vertical (kip)	Uplift (kip)	Horizontal (kip)
116.85	95.04	26.04

Site Number:	88009	Code:	ANSI/TIA-222-G	
Site Name:	CORNWALL CT, CT	Engineering Number:	OAA700092_C3_01	4/11/2017 12:43:13 PM
Customer:	AT&T MOBILITY			

Analysis Parameters

Location:	LITCHFIELD County, CT	Height (ft):	65
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Square	Bottom Face Width (ft):	20.00
Tower Manufacturer:	CSEI	Top Face Width (ft):	7.00
Tower Type:	Self Support	Anchor Bolt Detail Type	c

Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	93 mph
Exposure Category:	B	Design Windspeed With Ice:	40 mph
Topographic Category:	3	Operational Windspeed:	60 mph
Crest Height:	214.2 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	0.50				
T_L (sec):	6	p:	1.3	C_S:	0.064
S_S :	0.181	S_1 :	0.065	C_S, Max:	0.070
F_a :	1.600	F_V :	2.400	C_S, Min:	0.030
S_{ds} :	0.193	S_{d1} :	0.104		

Load Cases

1.2D + 1.6W Normal	93 mph Normal to Face with No Ice
1.2D + 1.6W 45 deg	93 mph 45 degree with No Ice
1.2D + 1.6W 90 deg	93 mph 90 degree with No Ice
1.2D + 1.6W 135 deg	93 mph 135 degree with No Ice
1.2D + 1.6W 180 deg	93 mph 180 degree with No Ice
1.2D + 1.6W 225 deg	93 mph 225 degree with No Ice
1.2D + 1.6W 270 deg	93 mph 270 degree with No Ice
1.2D + 1.6W 315 deg	93 mph 315 degree with No Ice
0.9D + 1.6W Normal	93 mph Normal to Face with No Ice (Reduced DL)
0.9D + 1.6W 45 deg	93 mph 45 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	93 mph 90 deg with No Ice (Reduced DL)
0.9D + 1.6W 135 deg	93 mph 135 deg with No Ice (Reduced DL)
0.9D + 1.6W 180 deg	93 mph 180 deg with No Ice (Reduced DL)
0.9D + 1.6W 225 deg	93 mph 225 deg with No Ice (Reduced DL)
0.9D + 1.6W 270 deg	93 mph 270 deg with No Ice (Reduced DL)
0.9D + 1.6W 315 deg	93 mph 315 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	40 mph Normal with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 45 deg	40 mph 45 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	40 mph 90 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 135 deg	40 mph 135 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	40 mph 180 deg with 0.75 in Radial Ice

Analysis Parameters

1.2D + 1.0Di + 1.0Wi 225 deg	40 mph 225 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 270 deg	40 mph 270 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 315 deg	40 mph 315 deg with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E Normal	Seismic Normal
(1.2 + 0.2Sds) * DL + E 45 deg	Seismic 45 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(1.2 + 0.2Sds) * DL + E 135 deg	Seismic 135 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 225 deg	Seismic 225 deg
(1.2 + 0.2Sds) * DL + E 270 deg	Seismic 270 deg
(1.2 + 0.2Sds) * DL + E 315 deg	Seismic 315 deg
(0.9 - 0.2Sds) * DL + E Normal	Seismic (Reduced DL) Normal
(0.9 - 0.2Sds) * DL + E 45 deg	Seismic (Reduced DL) 45 deg
(0.9 - 0.2Sds) * DL + E 90 deg	Seismic (Reduced DL) 90 deg
(0.9 - 0.2Sds) * DL + E 135 deg	Seismic (Reduced DL) 135 deg
(0.9 - 0.2Sds) * DL + E 180 deg	Seismic (Reduced DL) 180 deg
(0.9 - 0.2Sds) * DL + E 225 deg	Seismic (Reduced DL) 225 deg
(0.9 - 0.2Sds) * DL + E 270 deg	Seismic (Reduced DL) 270 deg
(0.9 - 0.2Sds) * DL + E 315 deg	Seismic (Reduced DL) 315 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 45 deg	Serviceability - 60 mph Wind 45 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 135 deg	Serviceability - 60 mph Wind 135 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 225 deg	Serviceability - 60 mph Wind 225 deg
1.0D + 1.0W Service 270 deg	Serviceability - 60 mph Wind 270 deg
1.0D + 1.0W Service 315 deg	Serviceability - 60 mph Wind 315 deg

Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	188.0	26.18	63	36
69.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	26.16	90	216
69.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	26.16	91	229
69.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	26.16	173	302
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	964.4	26.21	161	58
69.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	26.16	472	246
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	26.11	5326	2880
65.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	0.0	0.0	26.11	1	2
65.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	26.11	55	138
65.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	26.11	32	29
65.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	26.11	110	216
65.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	26.11	115	219
65.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	26.11	720	233
65.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	26.11	115	48
65.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	26.11	379	147
65.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	26.11	863	1296
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	9.0	1730.7	26.18	192	79
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	26.08	561	134
57.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	25.96	426	864
57.00	RFS RFS	3	55	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	25.96	355	238
57.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	25.96	469	246
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	1.00	1.00	0.0	0.0	25.93	8	1
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	219
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	219
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	219
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	25.93	335	176
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	25.93	678	217
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	25.93	686	1080
55.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	0.90	0.0	0.0	25.91	9427	3046
55.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	25.91	4605	737
50.00	Platfrom w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	25.75	2451	7200
48.00	Decibel	3	117	22.2	6.0	37.0	9.5	1.00	0.65	0.0	0.0	25.67	1511	505
46.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	1.00	0.50	0.0	0.0	25.58	38	27
46.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	1.00	0.88	0.0	0.0	25.58	440	65
46.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	1.00	0.77	0.0	0.0	25.58	608	73
46.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	1.00	0.94	0.0	0.0	25.58	1882	233
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	25.09	1535	7200
	Totals	101	20191	1234.6										

Discrete Appurtenance Properties 0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	188.0	26.18	63	20
69.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	26.16	90	122
69.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	26.16	91	129
69.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	26.16	173	170
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	964.4	26.21	161	32
69.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	26.16	472	139
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	26.11	5326	1620
65.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	0.0	0.0	26.11	1	1
65.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	26.11	55	78

Tower Loading

65.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	26.11	32	16
65.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	26.11	110	122
65.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	26.11	115	123
65.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	26.11	720	131
65.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	26.11	115	27
65.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	26.11	379	83
65.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	26.11	863	729
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	9.0	1730.7	26.18	192	45
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	26.08	561	75
57.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	25.96	426	486
57.00	RFS RFS	3	55	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	25.96	355	134
57.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	25.96	469	139
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	1.00	1.00	0.0	0.0	25.93	8	0
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	123
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	123
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	25.93	118	123
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	25.93	335	99
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	25.93	678	122
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	25.93	686	608
55.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	0.90	0.0	0.0	25.91	9427	1713
55.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	25.91	4605	415
50.00	Platfrom w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	25.75	2451	4050
48.00	Decibel	3	117	22.2	6.0	37.0	9.5	1.00	0.65	0.0	0.0	25.67	1511	284
46.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	1.00	0.50	0.0	0.0	25.58	38	15
46.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	1.00	0.88	0.0	0.0	25.58	440	36
46.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	1.00	0.77	0.0	0.0	25.58	608	41
46.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	1.00	0.94	0.0	0.0	25.58	1882	131
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	25.09	1535	4050
	Totals	101	20191	1234.6										

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
69.00	6' Omni	1	116	3.2	6.0	3.0	3.0	1.00	1.00	3.0	39.3	4.84	13	146
69.00	Alcatel-Lucent	3	146	2.8	1.7	12.2	10.6	0.80	0.50	0.0	0.0	4.84	14	561
69.00	Alcatel-Lucent 800	3	149	2.8	1.6	13.0	10.8	0.80	0.50	0.0	0.0	4.84	14	575
69.00	Alcatel-Lucent TD-	3	172	5.5	2.2	18.6	6.7	0.80	0.50	0.0	0.0	4.84	27	670
69.00	12' Dipole	1	217	7.8	12.0	3.0	3.0	1.00	1.00	6.0	194.0	4.85	32	270
69.00	RFS APXVSPP18-C-	3	276	9.4	6.0	11.8	7.0	0.80	0.69	0.0	0.0	4.84	64	1034
65.01	Fire Warden Cab	1	6521	771.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.83	3168	8305
65.00	Andrew ABT-DFDM-	1	4	0.3	0.3	1.7	1.6	0.80	0.50	0.0	0.0	4.83	0	4
65.00	Powerwave Allgon	6	38	1.3	0.8	6.7	5.4	0.80	0.50	0.0	0.0	4.83	13	296
65.00	Raycap DC6-48-60-	1	77	1.7	2.0	9.7	9.7	0.80	1.00	0.0	0.0	4.83	6	97
65.00	Ericsson RRUS 11	3	124	3.7	1.5	17.3	7.2	0.80	0.50	0.0	0.0	4.83	18	481
65.00	Ericsson RRUS 32	3	145	3.5	2.2	12.1	6.7	0.80	0.50	0.0	0.0	4.83	17	558
65.00	Powerwave Allgon	6	150	7.9	4.6	11.0	4.9	0.80	0.76	0.0	0.0	4.83	118	1121
65.00	Andrew SBNHH-	1	180	8.2	4.6	11.9	7.1	0.80	0.69	0.0	0.0	4.83	19	224
65.00	CCI HPA-65R-BUU-H6	2	288	12.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	4.83	57	716
65.00	Round Sector Frame	3	698	32.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	4.83	224	2728
63.00	18' Omni	1	318	12.4	18.0	3.0	3.0	1.00	1.00	9.0	459.3	4.84	51	395
63.00	Sinclair SV228-	1	610	64.1	6.0	116.0	62.0	1.00	1.00	0.0	0.0	4.82	263	755
57.00	Stand-Off	6	153	4.7	0.0	0.0	0.0	1.00	0.67	0.0	0.0	4.80	77	1244
57.00	RFS RFS	3	204	8.7	4.7	12.6	6.3	0.80	0.66	0.0	0.0	4.80	56	774
57.00	RFS APXVSPP18-C-	3	244	11.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	4.80	75	918
56.00	Symmetricom	1	9	0.6	0.5	3.5	3.5	1.00	1.00	0.0	0.0	4.80	3	11

Tower Loading

56.00	Ericsson RRUS 11	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	Ericsson RRUS 11 B4	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	Ericsson RRUS 11 B2	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	RFS APX16DWV-	3	193	7.8	4.7	13.3	3.1	0.80	0.60	0.0	0.0	4.80	46	723
56.00	Commscope LNX-	3	339	13.2	8.0	11.9	7.1	0.80	0.70	0.0	0.0	4.80	91	1256
56.00	Flat T-Arm	3	476	21.7	0.0	0.0	0.0	0.75	0.67	0.0	0.0	4.80	134	1894
55.00	10' HP Dish	3	2811	105.4	10.0	0.0	0.0	1.00	0.90	0.0	0.0	4.79	1159	10626
55.00	10' Std. Dish	1	2379	140.5	10.0	0.0	0.0	1.00	1.00	0.0	0.0	4.79	573	2978
50.00	Platfrom w/	1	18097	331.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.76	1344	22916
48.00	Decibel	3	621	24.3	6.0	37.0	9.5	1.00	0.65	0.0	0.0	4.75	191	2320
46.00	RFS FD9R6004/2C-3L	6	12	0.8	0.5	6.5	1.5	1.00	0.50	0.0	0.0	4.73	10	89
46.00	Antel BXA-	3	118	7.3	6.0	6.1	4.1	1.00	0.88	0.0	0.0	4.73	78	435
46.00	Amphenol Antel BXA-	3	176	10.5	5.9	11.2	5.2	1.00	0.77	0.0	0.0	4.73	98	646
46.00	Antel LPA-80063/6CF	6	339	11.1	5.9	15.0	13.1	1.00	0.94	0.0	0.0	4.73	251	2480
37.50	Access Platform	1	18296	211.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.64	833	23155
	Totals	101	73531	2575.0										

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	48.9	10.90	16	25
69.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	10.89	24	150
69.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	10.89	24	159
69.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	10.89	45	210
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	250.9	10.91	42	40
69.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	10.89	123	171
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.87	1386	2000
65.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	0.0	0.0	10.87	0	1
65.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	10.87	14	96
65.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	10.87	8	20
65.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	10.87	28	150
65.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	10.87	30	152
65.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	10.87	187	162
65.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	10.87	30	34
65.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	10.87	99	102
65.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	10.87	224	900
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	9.0	450.2	10.90	50	55
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	10.85	146	93
57.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	10.80	111	600
57.00	RFS RFS	3	55	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	10.80	92	165
57.00	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	10.80	122	171
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	1.00	1.00	0.0	0.0	10.79	2	0
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	10.79	87	122
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	10.79	176	151
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.79	178	750
55.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	0.90	0.0	0.0	10.78	2452	2115
55.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	10.78	1198	512
50.00	Platfrom w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.72	638	5000
48.00	Decibel	3	117	22.2	6.0	37.0	9.5	1.00	0.65	0.0	0.0	10.69	393	351
46.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	1.00	0.50	0.0	0.0	10.65	10	19
46.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	1.00	0.88	0.0	0.0	10.65	114	45
46.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	1.00	0.77	0.0	0.0	10.65	158	51

Tower Loading

46.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	1.00	0.94	0.0	0.0	10.65	490	162
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.44	399	5000
	Totals	101	20191	1234.6										

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	69.00	1 1/4" Fiber	1	1.25	1.05	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	69.00	1 1/4" Hybriflex	3	1.54	1.00	0	1	Individual	0.00	N	0.00	1.00	0.00
0.00	65.00	0.39" (10mm) Fiber	1	0.39	0.06	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	65.00	0.78" (19.7mm) 8	2	0.78	0.59	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	65.00	1 1/4" Coax	12	1.55	0.63	33	1	Block	0.00	N	0.00	1.00	0.00
0.00	65.00	Climbing Ladder	1	2.00	6.90	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	65.00	Waveguide	1	2.00	6.00	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	63.00	7/8" Coax	1	1.09	0.33	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	63.00	7/8" Coax	1	1.09	0.33	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	57.00	1 1/4" Hybriflex	3	1.54	1.00	33	1	Block	0.00	N	0.00	1.00	0.00
0.00	56.00	1 5/8" Hybriflex	2	1.98	1.30	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	56.00	1/2" Coax	1	0.63	0.15	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	56.00	Waveguide	1	2.00	6.00	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	55.00	7/8" Coax	1	1.09	0.33	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	48.00	1/2" Coax	3	0.63	0.15	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	48.00	7/8" Coax	12	1.09	0.33	33	1	Block	0.00	N	0.00	1.00	0.00
0.00	46.00	1 5/8" Coax	12	1.98	0.82	33	1	Block	0.00	N	0.00	1.00	0.00

Force/Stress Summary

Section: 1 1 Bot Elev (ft): 0.00 Height (ft): 12.500

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.625	-104.02	1.2D + 1.6W 45	12.57	50	50	50	63.9	33.0	173.38	0	0	0.00	0.00	59	Member Z
HORIZ DAL - 3X2.5X0.25	-4.63	0.9D + 1.6W	18.12	50	100	13	199.8	36.0	14.89	0	0	0.00	0.00	31	Member Y
DIAG SAU - 4X3X0.25	-11.97	1.2D + 1.6W	22.81	47	47	47	179.2	36.0	11.89	0	0	0.00	0.00	100	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.625	84.64	0.9D + 1.6W 45	33	45	211.17	0	0	0.00	0.00		40	Member
HORIZ DAL - 3X2.5X0.25	5.74	1.2D + 1.6W	36	58	85.21	0	0	0.00	0.00	0.00	6	Member
DIAG SAU - 4X3X0.25	10.64	1.2D + 1.6W	36	58	54.76	0	0	0.00	0.00	0.00	19	Member

Section: 2 1 Bot Elev (ft): 12.50 Height (ft): 12.500

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.625	-84.32	1.2D + 1.6W 45	12.57	50	50	50	63.9	33.0	173.38	0	0	0.00	0.00	48	Member Z
HORIZ DAL - 3X2.5X0.25	-2.91	1.2D + 1.6W	16.25	50	50	17	106.7	36.0	46.79	0	0	0.00	0.00	6	Member Y
DIAG SAU - 4X3X0.25	-12.61	1.2D + 1.6W	21.27	47	47	47	169.0	36.0	13.36	0	0	0.00	0.00	94	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.625	66.22	0.9D + 1.6W 45	33	45	211.17	0	0	0.00	0.00		31	Member
HORIZ DAL - 3X2.5X0.25	3.83	1.2D + 1.6W	36	58	85.21	0	0	0.00	0.00	0.00	4	Member
DIAG SAU - 4X3X0.25	11.51	0.9D + 1.6W	36	58	54.76	0	0	0.00	0.00	0.00	21	Member

Section: 3 1 Bot Elev (ft): 25.00 Height (ft): 12.500

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	-60.25	1.2D + 1.6W 45	12.57	50	50	50	63.9	33.0	140.22	0	0	0.00	0.00	42	Member Z
HORIZ DAL - 3.5X3X0.3125	-4.76	0.9D + 1.6W	14.37	50	100	17	136.1	36.0	47.22	0	0	0.00	0.00	10	Member Y
DIAG SAU - 3.5X3X0.25	-13.31	1.2D + 1.6W 90	19.78	47	47	47	163.4	36.0	13.20	0	0	0.00	0.00	100	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	45.04	0.9D + 1.6W 45	33	45	170.77	0	0	0.00	0.00		26	Member
HORIZ DAL - 3.5X3X0.3125	6.48	1.2D + 1.6W	36	58	125.39	0	0	0.00	0.00	0.00	5	Member
DIAG SAU - 3.5X3X0.25	11.80	1.2D + 1.6W 90	36	58	50.54	0	0	0.00	0.00	0.00	23	Member

Force/Stress Summary

Section: 4 1 Bot Elev (ft): 37.50 Height (ft): 12.500

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	-35.70	1.2D + 1.6W 45	12.57	50	50	50	63.9	33.0	140.22	0	0	0.00	0.00	25	Member Z
HORIZ DAL - 3.5X3X0.3125	-7.23	1.2D + 1.6W 90	12.50	100	100	17	136.4	36.0	47.01	0	0	0.00	0.00	15	Member X
DIAG SAE - 3.5x3.5x0.25	-12.59	1.2D + 1.6W	18.37	47	47	47	143.4	36.0	18.57	0	0	0.00	0.00	67	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	25.71	0.9D + 1.6W 45	33	45	170.77	0	0	0.00	0.00		15	Member
HORIZ DAL - 3.5X3X0.3125	5.11	1.2D + 1.6W	36	58	125.39	0	0	0.00	0.00	0.00	4	Member
DIAG SAE - 3.5x3.5x0.25	11.02	1.2D + 1.6W	36	58	54.76	0	0	0.00	0.00	0.00	20	Member

Section: 5 1 Bot Elev (ft): 50.00 Height (ft): 0.100

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	-12.23	1.2D + 1.6W 45	0.39	50	50	50	2.0	33.0	170.74	0	0	0.00	0.00	7	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00		

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	19.23	0.9D + 1.6W 45	33	45	170.77	0	0	0.00	0.00		11	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

Section: 6 1 Bot Elev (ft): 50.10 Height (ft): 14.900

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	-18.13	1.2D + 1.6W 45	7.45	100	100	100	75.8	33.0	129.46	0	0	0.00	0.00	14	Member Z
HORIZ DAL - 2.5X2X0.25	-5.06	1.2D + 1.6W 90	7.000	100	100	50	133.7	36.0	26.92	0	0	0.00	0.00	18	Member Y
DIAG SAU - 3X2X0.25	-6.42	1.2D + 1.6W	10.22	50	50	50	136.0	36.0	14.52	0	0	0.00	0.00	44	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG SAE - 6X6X0.5	4.63	1.2D + 1.6W 45	33	45	170.77	0	0	0.00	0.00		2	Member
HORIZ DAL - 2.5X2X0.25	1.38	1.2D + 1.6W 45	36	58	69.01	0	0	0.00	0.00	0.00	2	Member
DIAG SAU - 3X2X0.25	10.88	0.9D + 1.6W 45	36	58	38.56	0	0	0.00	0.00	0.00	28	Member

Detailed Reactions

Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	1	-9.43	83.91	-16.49	
	1a	6.66	-59.01	-13.78	
	1b	-6.66	-59.01	-13.78	
	1c	9.43	83.91	-16.49	
1.2D + 1.6W 45 deg	1	-18.40	116.85	-18.43	
	1a	-6.71	12.38	-3.91	
	1b	-15.74	-91.99	-15.72	
	1c	-3.91	12.54	-6.70	
1.2D + 1.6W 90 deg	1	-16.49	83.79	-9.44	
	1a	-16.49	83.79	9.44	
	1b	-13.79	-58.89	-6.65	
	1c	-13.79	-58.89	6.65	
1.2D + 1.6W 135 deg	1	-6.71	12.38	3.91	
	1a	-18.40	116.85	18.43	
	1b	-3.91	12.54	6.70	
	1c	-15.74	-91.99	15.72	
1.2D + 1.6W 180 deg	1	6.66	-59.01	13.78	
	1a	-9.43	83.91	16.49	
	1b	9.43	83.91	16.49	
	1c	-6.66	-59.01	13.78	
1.2D + 1.6W 225 deg	1	15.74	-91.99	15.72	
	1a	3.91	12.54	6.70	
	1b	18.40	116.85	18.43	
	1c	6.71	12.38	3.91	
1.2D + 1.6W 270 deg	1	13.79	-58.89	6.65	
	1a	13.79	-58.89	-6.65	
	1b	16.49	83.79	9.44	
	1c	16.49	83.79	-9.44	
1.2D + 1.6W 315 deg	1	3.91	12.54	-6.70	
	1a	15.74	-91.99	-15.72	
	1b	6.71	12.38	-3.91	
	1c	18.40	116.85	-18.43	
0.9D + 1.6W Normal	1	-9.08	80.75	-16.14	
	1a	7.00	-62.08	-14.13	
	1b	-7.00	-62.08	-14.13	
	1c	9.08	80.75	-16.14	
0.9D + 1.6W 45 deg	1	-18.05	113.68	-18.07	
	1a	-6.36	9.26	-4.27	
	1b	-16.08	-95.04	-16.07	
	1c	-4.26	9.44	-6.35	
0.9D + 1.6W 90 deg	1	-16.14	80.63	-9.09	
	1a	-16.14	80.63	9.09	
	1b	-14.14	-61.96	-7.00	
	1c	-14.14	-61.96	7.00	
0.9D + 1.6W 135 deg	1	-6.36	9.26	4.27	
	1a	-18.05	113.68	18.07	
	1b	-4.26	9.44	6.35	
	1c	-16.08	-95.04	16.07	

0.9D + 1.6W 180 deg	1	7.00	-62.08	14.13
	1a	-9.08	80.75	16.14
	1b	9.08	80.75	16.14
	1c	-7.00	-62.08	14.13
0.9D + 1.6W 225 deg	1	16.08	-95.04	16.07
	1a	4.26	9.44	6.35
	1b	18.05	113.68	18.07
	1c	6.36	9.26	4.27
0.9D + 1.6W 270 deg	1	14.14	-61.96	7.00
	1a	14.14	-61.96	-7.00
	1b	16.14	80.63	9.09
	1c	16.14	80.63	-9.09
0.9D + 1.6W 315 deg	1	4.26	9.44	-6.35
	1a	16.08	-95.04	-16.07
	1b	6.36	9.26	-4.27
	1c	18.05	113.68	-18.07
1.2D + 1.0Di + 1.0Wi Normal	1	-3.96	53.70	-5.56
	1a	-0.02	18.77	-1.54
	1b	0.02	18.77	-1.54
	1c	3.96	53.70	-5.56
1.2D + 1.0Di + 1.0Wi 45 deg	1	-6.04	61.65	-6.06
	1a	-3.18	36.23	0.83
	1b	-2.06	10.83	-2.05
	1c	0.80	36.25	-3.20
1.2D + 1.0Di + 1.0Wi 90 deg	1	-5.54	53.69	-3.98
	1a	-5.54	53.69	3.98
	1b	-1.56	18.79	0.04
	1c	-1.56	18.79	-0.04
1.2D + 1.0Di + 1.0Wi 135 deg	1	-3.18	36.23	-0.83
	1a	-6.04	61.65	6.06
	1b	0.80	36.25	3.20
	1c	-2.06	10.83	2.05
1.2D + 1.0Di + 1.0Wi 180 deg	1	-0.02	18.77	1.54
	1a	-3.96	53.70	5.56
	1b	3.96	53.70	5.56
	1c	0.02	18.77	1.54
1.2D + 1.0Di + 1.0Wi 225 deg	1	2.06	10.83	2.05
	1a	-0.80	36.25	3.20
	1b	6.04	61.65	6.06
	1c	3.18	36.23	-0.83
1.2D + 1.0Di + 1.0Wi 270 deg	1	1.56	18.79	-0.04
	1a	1.56	18.79	0.04
	1b	5.54	53.69	3.98
	1c	5.54	53.69	-3.98
1.2D + 1.0Di + 1.0Wi 315 deg	1	-0.80	36.25	-3.20
	1a	2.06	10.83	-2.05
	1b	3.18	36.23	0.83
	1c	6.04	61.65	-6.06
(1.2 + 0.2Sds) * DL + E Normal M1	1	-1.89	16.10	-2.25
	1a	-0.93	7.66	0.58
	1b	0.93	7.66	0.58
	1c	1.89	16.10	-2.25

(1.2 + 0.2Sds) * DL + E Normal M2	1	-1.87	15.98	-2.17
	1a	-0.95	7.78	0.66
	1b	0.95	7.78	0.66
	1c	1.87	15.98	-2.17
(1.2 + 0.2Sds) * DL + E 45 deg M1	1	-2.34	17.85	-2.34
	1a	-1.66	11.88	1.16
	1b	0.48	5.91	0.49
	1c	1.16	11.88	-1.67
(1.2 + 0.2Sds) * DL + E 45 deg M2	1	-2.27	17.68	-2.28
	1a	-1.62	11.88	1.21
	1b	0.55	6.08	0.55
	1c	1.20	11.88	-1.62
(1.2 + 0.2Sds) * DL + E 90 deg M1	1	-2.24	16.10	-1.89
	1a	-2.24	16.10	1.89
	1b	0.58	7.65	0.94
	1c	0.58	7.65	-0.94
(1.2 + 0.2Sds) * DL + E 90 deg M2	1	-2.17	15.98	-1.88
	1a	-2.17	15.98	1.88
	1b	0.65	7.78	0.95
	1c	0.65	7.78	-0.95
(1.2 + 0.2Sds) * DL + E 135 deg M1	1	-1.66	11.88	-1.16
	1a	-2.34	17.85	2.34
	1b	1.16	11.88	1.67
	1c	0.48	5.91	-0.49
(1.2 + 0.2Sds) * DL + E 135 deg M2	1	-1.62	11.88	-1.21
	1a	-2.27	17.68	2.28
	1b	1.20	11.88	1.62
	1c	0.55	6.08	-0.55
(1.2 + 0.2Sds) * DL + E 180 deg M1	1	-0.93	7.66	-0.58
	1a	-1.89	16.10	2.25
	1b	1.89	16.10	2.25
	1c	0.93	7.66	-0.58
(1.2 + 0.2Sds) * DL + E 180 deg M2	1	-0.95	7.78	-0.66
	1a	-1.87	15.98	2.17
	1b	1.87	15.98	2.17
	1c	0.95	7.78	-0.66
(1.2 + 0.2Sds) * DL + E 225 deg M1	1	-0.48	5.91	-0.49
	1a	-1.16	11.88	1.67
	1b	2.34	17.85	2.34
	1c	1.66	11.88	-1.16
(1.2 + 0.2Sds) * DL + E 225 deg M2	1	-0.55	6.08	-0.55
	1a	-1.20	11.88	1.62
	1b	2.27	17.68	2.28
	1c	1.62	11.88	-1.21
(1.2 + 0.2Sds) * DL + E 270 deg M1	1	-0.58	7.65	-0.94
	1a	-0.58	7.65	0.94
	1b	2.24	16.10	1.89
	1c	2.24	16.10	-1.89
(1.2 + 0.2Sds) * DL + E 270 deg M2	1	-0.65	7.78	-0.95
	1a	-0.65	7.78	0.95
	1b	2.17	15.98	1.88
	1c	2.17	15.98	-1.88
(1.2 + 0.2Sds) * DL + E 315 deg M1	1	-1.16	11.88	-1.67

	1a	-0.48	5.91	0.49
	1b	1.66	11.88	1.16
	1c	2.34	17.85	-2.34
(1.2 + 0.2Sds) * DL + E 315 deg M2	1	-1.20	11.88	-1.62
	1a	-0.55	6.08	0.55
	1b	1.62	11.88	1.21
	1c	2.27	17.68	-2.28
(0.9 - 0.2Sds) * DL + E Normal M1	1	-1.46	12.48	-1.82
	1a	-0.50	4.04	0.15
	1b	0.50	4.04	0.15
	1c	1.46	12.48	-1.82
(0.9 - 0.2Sds) * DL + E Normal M2	1	-1.44	12.36	-1.74
	1a	-0.52	4.16	0.23
	1b	0.52	4.16	0.23
	1c	1.44	12.36	-1.74
(0.9 - 0.2Sds) * DL + E 45 deg M1	1	-1.91	14.23	-1.91
	1a	-1.23	8.26	0.73
	1b	0.05	2.29	0.06
	1c	0.73	8.26	-1.24
(0.9 - 0.2Sds) * DL + E 45 deg M2	1	-1.84	14.05	-1.85
	1a	-1.19	8.26	0.78
	1b	0.12	2.47	0.12
	1c	0.77	8.26	-1.19
(0.9 - 0.2Sds) * DL + E 90 deg M1	1	-1.81	12.48	-1.46
	1a	-1.81	12.48	1.46
	1b	0.15	4.04	0.51
	1c	0.15	4.04	-0.51
(0.9 - 0.2Sds) * DL + E 90 deg M2	1	-1.74	12.36	-1.45
	1a	-1.74	12.36	1.45
	1b	0.22	4.16	0.52
	1c	0.22	4.16	-0.52
(0.9 - 0.2Sds) * DL + E 135 deg M1	1	-1.23	8.26	-0.73
	1a	-1.91	14.23	1.91
	1b	0.73	8.26	1.24
	1c	0.05	2.29	-0.06
(0.9 - 0.2Sds) * DL + E 135 deg M2	1	-1.19	8.26	-0.78
	1a	-1.84	14.05	1.85
	1b	0.77	8.26	1.19
	1c	0.12	2.47	-0.12
(0.9 - 0.2Sds) * DL + E 180 deg M1	1	-0.50	4.04	-0.15
	1a	-1.46	12.48	1.82
	1b	1.46	12.48	1.82
	1c	0.50	4.04	-0.15
(0.9 - 0.2Sds) * DL + E 180 deg M2	1	-0.52	4.16	-0.23
	1a	-1.44	12.36	1.74
	1b	1.44	12.36	1.74
	1c	0.52	4.16	-0.23
(0.9 - 0.2Sds) * DL + E 225 deg M1	1	-0.05	2.29	-0.06
	1a	-0.73	8.26	1.24
	1b	1.91	14.23	1.91
	1c	1.23	8.26	-0.73
(0.9 - 0.2Sds) * DL + E 225 deg M2	1	-0.12	2.47	-0.12
	1a	-0.77	8.26	1.19

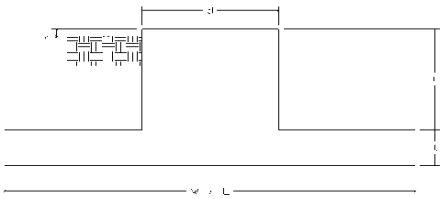
	1b	1.84	14.05	1.85
	1c	1.19	8.26	-0.78
(0.9 - 0.2Sds) * DL + E 270 deg M1	1	-0.15	4.04	-0.51
	1a	-0.15	4.04	0.51
	1b	1.81	12.48	1.46
	1c	1.81	12.48	-1.46
(0.9 - 0.2Sds) * DL + E 270 deg M2	1	-0.22	4.16	-0.52
	1a	-0.22	4.16	0.52
	1b	1.74	12.36	1.45
	1c	1.74	12.36	-1.45
(0.9 - 0.2Sds) * DL + E 315 deg M1	1	-0.73	8.26	-1.24
	1a	-0.05	2.29	0.06
	1b	1.23	8.26	0.73
	1c	1.91	14.23	-1.91
(0.9 - 0.2Sds) * DL + E 315 deg M2	1	-0.77	8.26	-1.19
	1a	-0.12	2.47	0.12
	1b	1.19	8.26	0.78
	1c	1.84	14.05	-1.85
1.0D + 1.0W Service Normal	1	-3.25	28.96	-5.10
	1a	0.93	-8.21	-2.78
	1b	-0.93	-8.21	-2.78
	1c	3.25	28.96	-5.10
1.0D + 1.0W Service 45 deg	1	-5.60	37.53	-5.60
	1a	-2.54	10.35	-0.22
	1b	-3.28	-16.79	-3.28
	1c	-0.22	10.40	-2.55
1.0D + 1.0W Service 90 deg	1	-5.09	28.93	-3.26
	1a	-5.09	28.93	3.26
	1b	-2.78	-8.18	-0.93
	1c	-2.78	-8.18	0.93
1.0D + 1.0W Service 135 deg	1	-2.54	10.35	0.22
	1a	-5.60	37.53	5.60
	1b	-0.22	10.40	2.55
	1c	-3.28	-16.79	3.28
1.0D + 1.0W Service 180 deg	1	0.93	-8.21	2.78
	1a	-3.25	28.96	5.10
	1b	3.25	28.96	5.10
	1c	-0.93	-8.21	2.78
1.0D + 1.0W Service 225 deg	1	3.28	-16.79	3.28
	1a	0.22	10.40	2.55
	1b	5.60	37.53	5.60
	1c	2.54	10.35	0.22
1.0D + 1.0W Service 270 deg	1	2.78	-8.18	0.93
	1a	2.78	-8.18	-0.93
	1b	5.09	28.93	3.26
	1c	5.09	28.93	-3.26
1.0D + 1.0W Service 315 deg	1	0.22	10.40	-2.55
	1a	3.28	-16.79	-3.28
	1b	2.54	10.35	-0.22
	1c	5.60	37.53	-5.60

Site Number:	88009	Code:	ANSI/TIA-222-G		
Site Name:	CORNWALL CT, CT	Engineering Number:	OAA700092_C3_01		4/11/2017 12:43:14 PM
Customer:	AT&T MOBILITY				

Max Uplift:	95.04 (kip)	Moment Ice:	718.60 (kip-ft)	Moment:	2,953.44 (kip-ft)	1.2D + 1.6W 315 deg
Max Down:	116.85 (kip)	Total Down Ice:	144.96 (kip)	Total Down:	49.79 (kip)	
Max Shear:	26.04 (kip)	Total Shear Ice:	14.83 (kip)	Total Shear:	63.30 (kip)	

Site Name:	Cornwall, CT
Site Number:	88009
Engineering Number:	OAA700092
Engineer:	Tsega.Melesse
Date:	04/11/17
Tower Type:	SST w/4 Legs

Program Last Updated: *#REF!*



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

Design / Analysis / Mapping:	Mapping	
Compression/Leg:	116.9	k
Uplift/Leg:	95.0	k
Total Shear:	63.3	k
Moment:	2953.4	k-ft
Tower + Appurtenance Weight:	49.8	k
Depth to Base of Foundation (l + t - h):	4.92	ft
Diameter of Pier (d):	4.00	ft
Height of Pier above Ground (h):	0.50	
Width of Pad (W):	30.00	ft
Length of Pad (L):	30.00	ft
Thickness of Pad (t):	2.92	ft
Tower Leg Center to Center:	20.00	ft
Number of Tower Legs:	4.0	(1 if MP or GT)
Tower Center from Mat Center:	0.00	ft
Depth Below Ground Surface to Water Table:	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil Above Water Table:	125.0	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	67.0	pcf
Friction Angle of Uplift:	35.0	Degrees
Ultimate Coefficient of Shear Friction:	0.30	
Ultimate Compressive Bearing Pressure:	40000.0	psf
Ultimate Passive Pressure on Pad Face:	1914.0	psf
$\phi_{\text{Soil and Concrete Weight}}$:	0.9	
ϕ_{Soil}:	0.75	

Overturning Moment Usage

Design OTM:	3296.5	k-ft
OTM Resistance:	9535.6	k-ft
Design OTM / OTM Resistance:	0.35	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	1198	psf
Factored Nominal Bearing Pressure:	30000	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.04	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety

Total Factored Sliding Resistance:	263.2	k
Sliding Design / Sliding Resistance:	0.24	Result: OK

PROJECT:	LTE 2C
SITE NUMBER:	CTL01025
FA NUMBER:	10035044
PTN NUMBER:	2051A0679B
PACE NUMBER:	MRCTB018273
ATC#: / SITE NAME	88009 / CORNWALL CT
SITE NAME:	CORNWALL
SITE ADDRESS:	36 MOHAWK MOUNTAIN CORNWALL, CT 06753

PROJECT INFORMATION

SITE NAME:	CORNWALL
SITE NUMBER:	CTL01025
SITE ADDRESS:	36 MOHAWK MOUNTAIN CORNWALL, CT 06753
FA NUMBER:	10035044
PTN NUMBER:	2051A0679B
PACE NUMBER:	MRCTB018273
USID NUMBER:	71288
ATC NUMBER:	88009 / CORNWALL CT
APPLICANT:	AT&T WIRELESS 550 COCHITUATE ROAD SUITE 550 13 AND 14 FRAMINGHAM, MA 01701
TOWER OWNER:	AMERICAN TOWER CORPORATION 111 SHILOH ST PITTSBURGH, PA 15211
JURISDICTION:	CORNWALL, CT
COUNTY:	LITCHFIELD COUNTY
SITE COORDINATES FROM	(RFDS)
LATITUDE:	41.821298°
LONGITUDE:	-73.296443°
GROUND ELEV.:	1674'
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
AT&T RF MANAGER:	CAMERON SYME
PHONE:	(508) 596-7146
EMAIL:	cs6970@att.com

PROJECT CONSULTANTS

PROJECT MANAGER:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	RYAN BURGDORFER (508) 665-8005
EMAIL:	Ryan.Burgdorfer@Smartlinkllc.com
SITE AQUISITION:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	SHARON KEEFE (978) 930-3918
EMAIL:	Sharon.Keefe@Smartlinkllc.com
ENGINEER/ARCHITECT:	FULLERTON ENGINEERING
ADDRESS:	1100 E. WOODFIELD ROAD, SUITE 500 SCHAUMBURG, IL 60173
CONTACT:	MILEN DIMITROV (847) 908-8439
EMAIL:	MDimitrov@fullertonengineering.com
CONSTRUCTION:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	MARK DONNELLY (617) 515-2080
EMAIL:	mark.donnelly@smartlinkllc.com

SCOPE OF WORK

LTE PCS WILL BE 2C AT THE SITE WITH BRONZE STANDARD CONFIGURATION. PROPOSED 2C PROJECT SCOPE HEREIN BASED ON RFDS ID # 1114684, VERSION 3.00 LAST UPDATED 11/22/16.

- (3) NEW ANTENNAS TO REPLACE (3) EXISTING ANTENNAS
- (3) NEW RRUS-32 B2 UNITS
- (3) NEW 25 AMP BREAKERS
- (1) NEW LTE DUS

- CONTRACTOR SHALL FURNISH ALL MATERIAL WITH THE EXCEPTION OF AT&T SUPPLIED MATERIAL.
- ALL MATERIAL SHALL BE INSTALLED BY THE CONTRACTOR, UNLESS STATED OTHERWISE.

SITE LOCATION MAP

DIRECTIONS

SCAN QR CODE FOR LINK TO SITE LOCATION MAP

APPLICABLE BUILDING CODES AND STANDARDS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE:	2012 INTERNATIONAL BUILDING CODE 2016 CONNECTICUT STATE BUILDING CODE SUPPLEMENT
ELECTRICAL CODE:	2014 NATIONAL ELECTRIC CODE

- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- ADA ACCESS REQUIREMENTS ARE NOT REQUIRED.
- THIS FACILITY DOES NOT REQUIRE POTABLE WATER AND WILL NOT PRODUCE ANY SEWAGE

DRAWING INDEX

T1	TITLE SHEET
SP1	NOTES AND SPECIFICATIONS
SP2	NOTES AND SPECIFICATIONS
A1	COMPOUND PLAN
A2	EQUIPMENT PLAN
A3	ELEVATIONS
A4	ANTENNA PLANS
A5	EQUIPMENT DETAILS
A6	ANTENNA & CABLE CONFIGURATION
A7	CABLE NOTES AND COLOR CODING
A8	GROUNDING DETAILS

CALL 811 before you DIG
811 Know what's below. Call before you dig.
www.cbyd.com

NOTE: DRAWING SCALES ARE FOR 11"x17" SHEETS UNLESS OTHERWISE NOTED

at&t
550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701

smartlink
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

FULLERTON ENGINEERING·DESIGN
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	06/14/16	90% REVIEW	VV
1	09/22/16	FOR PERMIT	KC
2	12/20/16	FOR CONSTRUCTION	KC

I HEREBY CERTIFY THAT THESE DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

STATE OF CONNECTICUT
HENRY M. BELLAGAMBA
25358
LICENSED PROFESSIONAL ENGINEER

SITE NAME
CORNWALL

SITE NUMBER:
CTL01025

SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
TITLE SHEET

SHEET NUMBER
T1

FEC# 2016.0200.0001

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR/CM – SMARTLINK
   OWNER – AT&T WIRELESS

2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.

3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.

5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.

10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.

12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.

13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.

14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.

15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.

19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OT 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.

23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.

24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.

25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.

26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.

28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.

29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.

32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).

33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.

34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

35. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.

36. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.

37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.

38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA–222 OR APPLICABLE LOCAL CODES.

41. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.

42. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.

43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.

44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.

45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.

46. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50–OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.

47. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/– 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/– 0.5% AS DEFINED BY THE RFDS. REFER TO ND–00246.

48. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.

49. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.

50. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

51. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.

52. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
   A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
   B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

FIBER & POWER CABLE MOUNTING

53. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.

54. THE TYPE TC–ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC–ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.

55. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC–ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

62. TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO

    ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.

63. CONTRACTOR SHALL VERIFY THE DOWN–TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.

64. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.

65. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'–0".

66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'–0" OC.

67. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.

68. CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.

69. CONTRACTOR SHALL PROVIDE STRAIN–RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN–RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

70. CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

71. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.

72. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.

73. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

74. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE–HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.

75. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
   A. TEMPERATURE SHALL BE ABOVE 50° F.
   B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
   C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
   D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS

76. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
   A. GROUNDING AT THE ANTENNA LEVEL.
   B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'–0", ADDITIONAL CABLE GROUNDING REQUIRED.
   C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
   D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
   E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.

77. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'–0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

at&t
550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701

smartlink
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

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SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	06/14/16	90% REVIEW	VV
1	09/22/16	FOR PERMIT	KC
2	12/20/16	FOR CONSTRUCTION	KC

I HEREBY CERTIFY THAT THESE DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

STATE OF CONNECTICUT
HENRY M. BELLAGAMBA
25358
PROFESSIONAL ENGINEER

SITE NAME
CORNWALL

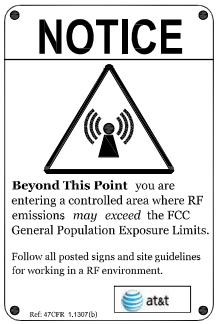
SITE NUMBER:
CTL01025

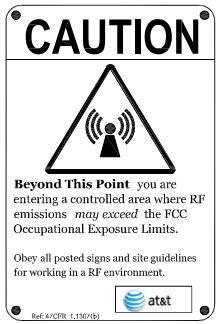
SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
NOTES AND SPECIFICATIONS

SHEET NUMBER
SP1

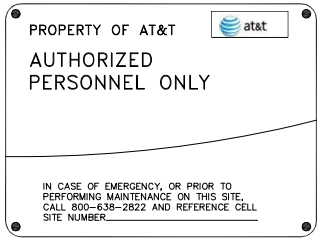
FEC# 2016.0200.0001





ALERTING SIGNS

ALERTING SIGN



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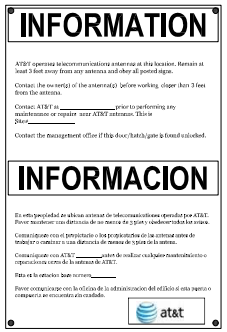

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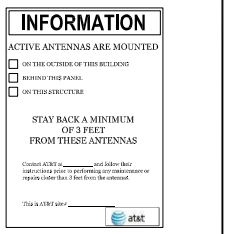

INFO SIGN #2

ALERTING SIGN
(FOR CELL SITE BATTERIES)

ALERTING SIGN
(FOR DIESEL FUEL)

ALERTING SIGN
(FOR PROPANE)

INFO SIGN #3

GENERAL SIGNAGE GUIDELINES

STRUCTURE TYPE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	STRIPING	NOTICE SIGN	CAUTION SIGN
TOWERS							
MONOPOLE/MONOPINE/MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			AT THE HEIGHT OF THE FIRST CLIMBING STEP, MIN 9 FT ABOVE GROUND
SEC TOWERS/TOWERS WITH HIGH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
LIGHT POLES/FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99%, NOTICE SIGN; OVER 99% CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 9FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		NOTICE OR CAUTION SIGN AT NO LESS THAN 9FT ABOVE GROUND: ONLY IF THE EXPOSURE EXCEEDS 90% OF THE GENERAL PUBLIC EXPOSURE AT EXPOSURE AT 6FT ABOVE GROUND OR AT OUTSIDE OF SURFACE OF ADJACENT BUILDING	
TOWERS							
AT ALL ACCESS POINTS TO THE ROOF	X			X			
ON ANTENNAS	X		X	X			
CONCEALED ANTENNAS	X	X		X			
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X		X			
ANTENNAS ON SUPPORT STRUCTURE	X	X		X			
ROOFVIEW GRAPH							
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X		EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFVIEW RESULTS) AT ANTENNA /BARRIER	
RADIATION AREA IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X	DIAGONAL, YELLOW STRIPING AS TO ROOFVIEW GRAPH		
CHURCH STEEPLES	ACCESS TO STEEPLE	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO STEEPLE			CAUTION SIGN AT THE ANTENNAS
WATER STATIONS	ACCESS TO LADDER	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO LADDER			CAUTION SIGN BESIDE INFO SIGN #1, MIN. 9FT ABOVE GROUND

NOTES FOR ROOFTOP SITES:

1. EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO: THE OUTER EDGE OF THE STRIPED OFF AREA OR THE OUTER ANTENNAS OF THE SECTOR
2. IF ROOFVIEWS SHOWS: ONLY BLUE = NOTICE SIGN, BLUE AND YELLOW = CAUTION SIGN, ONLY YELLOW = CAUTION SIGN TO BE INSTALLED
3. SHOULD THE REQUIRED STRIPING AREAS INTERFERE WITH ANY STRUCTURE OR EQUIPMENT (A/C, VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.). PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.

SIGNAGE GUIDELINES CHART

at&t
550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701

smartlink
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

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www.FullertonEngineering.com

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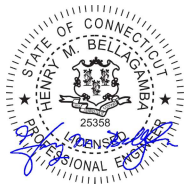


SITE NAME
CORNWALL

SITE NUMBER:
CTL01025

SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
NOTES AND SPECIFICATIONS

SHEET NUMBER
SP2

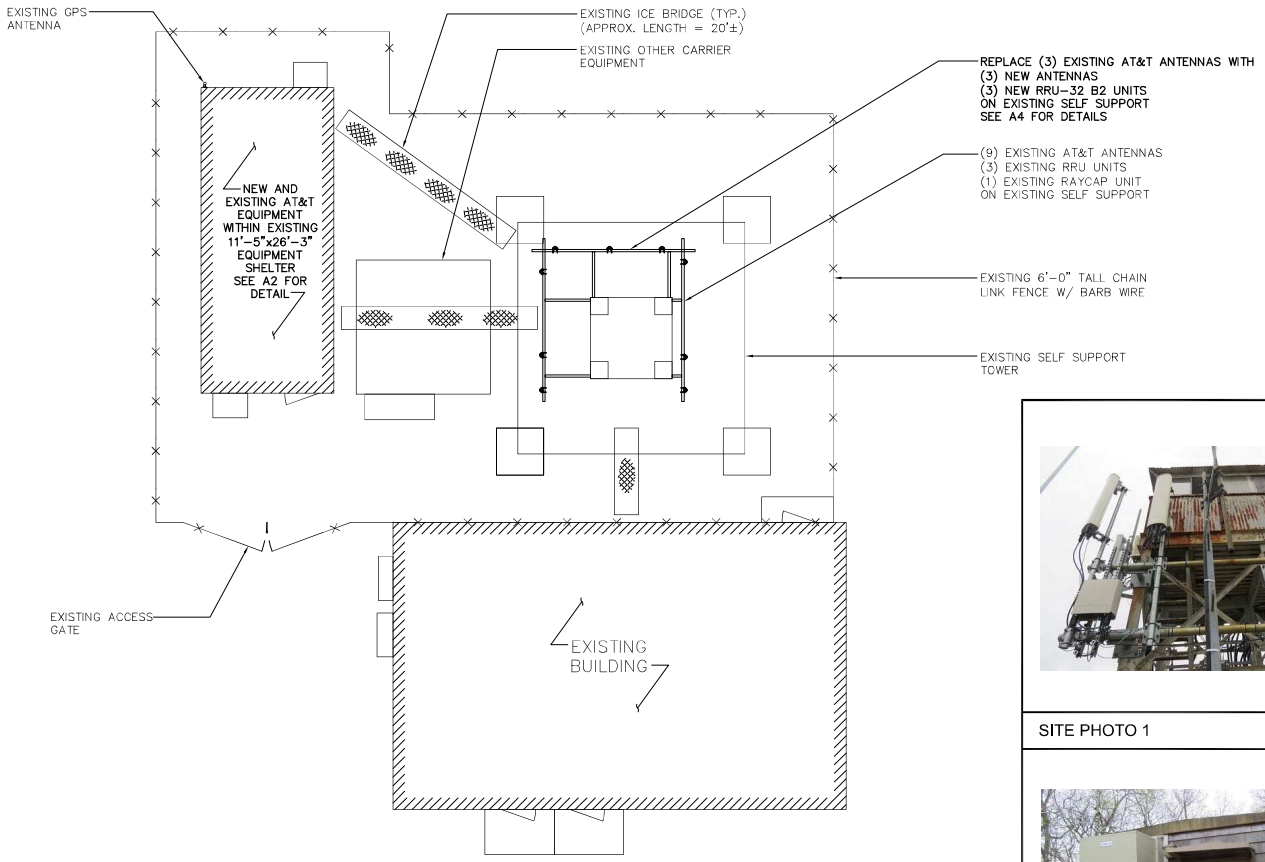
FEC# 2016.0200.0001

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
℄	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
FIF	FACILITY INTERFACE FRAME
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MCPA	MULTI-CARRIER POWER AMPLIFIER
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
PPC	POWER PROTECTION CABINET
PL	PROPERTY LINE
RBS	RADIO BASED STATION
RET	REMOTE ELECTRIC TILT
RRU	REMOTE RADIO UNIT
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS

- REVISION
- WORK POINT
- UTILITY POLE
- COMPRESSED STONE
- BRICK
- CONCRETE
- EARTH
- GRAVEL
- MASONRY
- STEEL
- CENTERLINE
- PROPERTY LINE
- LEASE LINE
- EASEMENT LINE
- CHAIN LINK FENCE
- WOOD FENCE
- UE — BELOW GRADE ELECTRIC
- UT — BELOW GRADE TELEPHONE
- OE/OT — OVERHEAD ELECTRIC/TELEPHONE
- SECTION REFERENCE



COMPOUND PLAN — SCALE: 3/32" = 1'-0" | 1

SITE PHOTO 1 — SCALE: N.T.S. | 2

SITE PHOTO 2 — SCALE: N.T.S. | 3

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2	12/20/16	FOR CONSTRUCTION	KC

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STATE OF CONNECTICUT · HENRY M. BELLAGAMBA · 25358 · LICENSED PROFESSIONAL ENGINEER

SITE NAME
CORNWALL

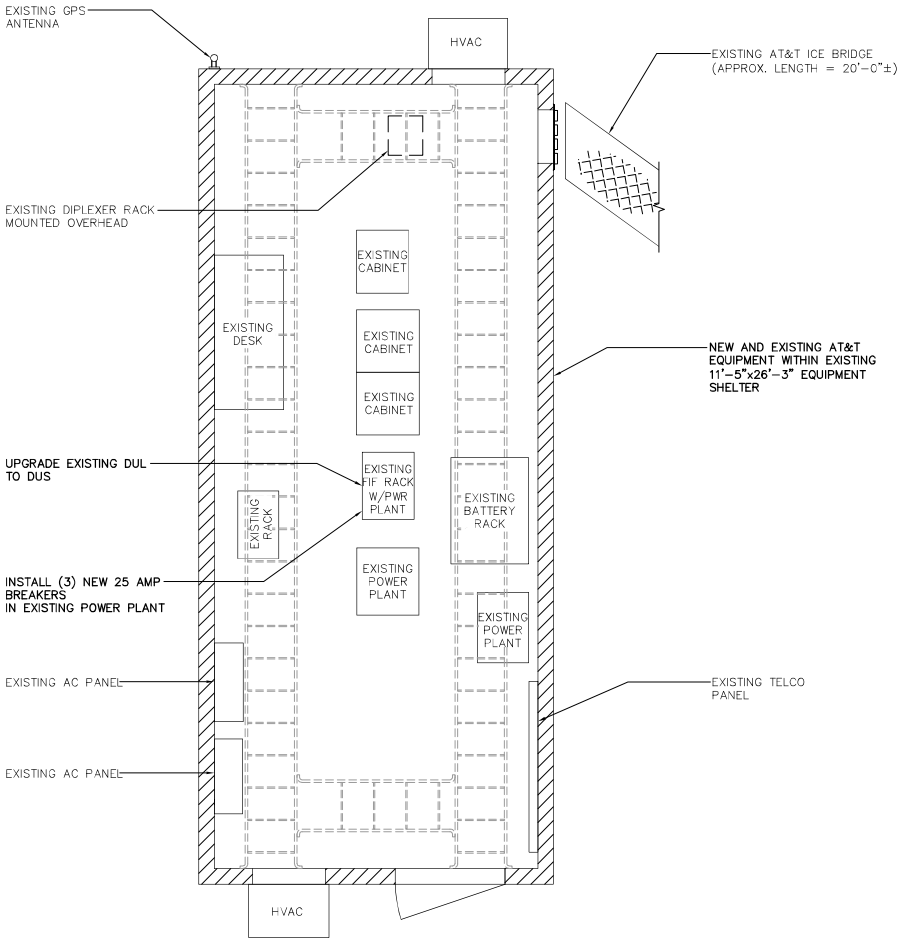
SITE NUMBER:
CTL01025

SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
COMPOUND PLAN

SHEET NUMBER
A1

FEC# 2016.0200.0001



EQUIPMENT PLAN

SCALE: 1/4" = 1'-0" | 1

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SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

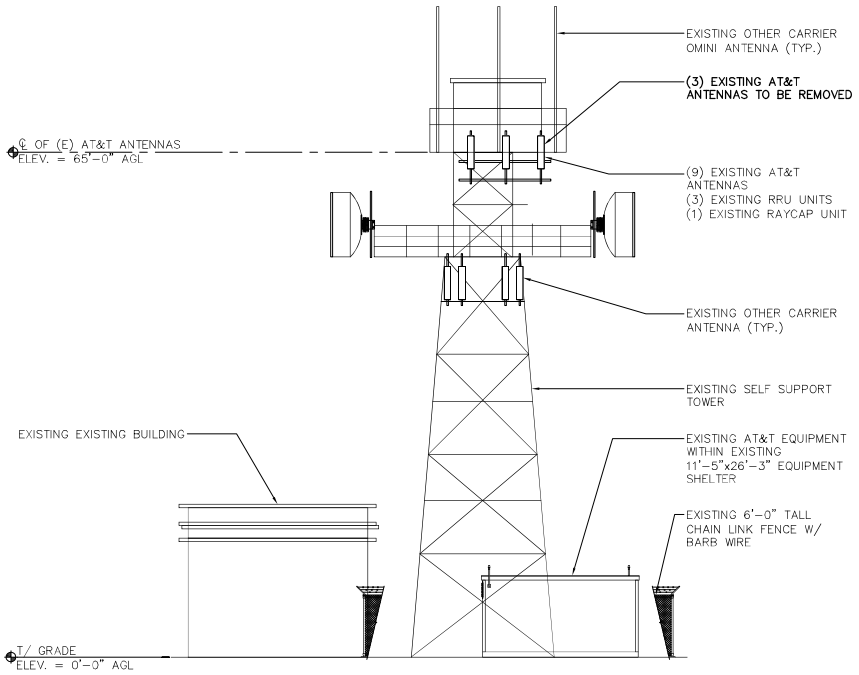
SHEET NAME
EQUIPMENT PLAN

SHEET NUMBER
A2

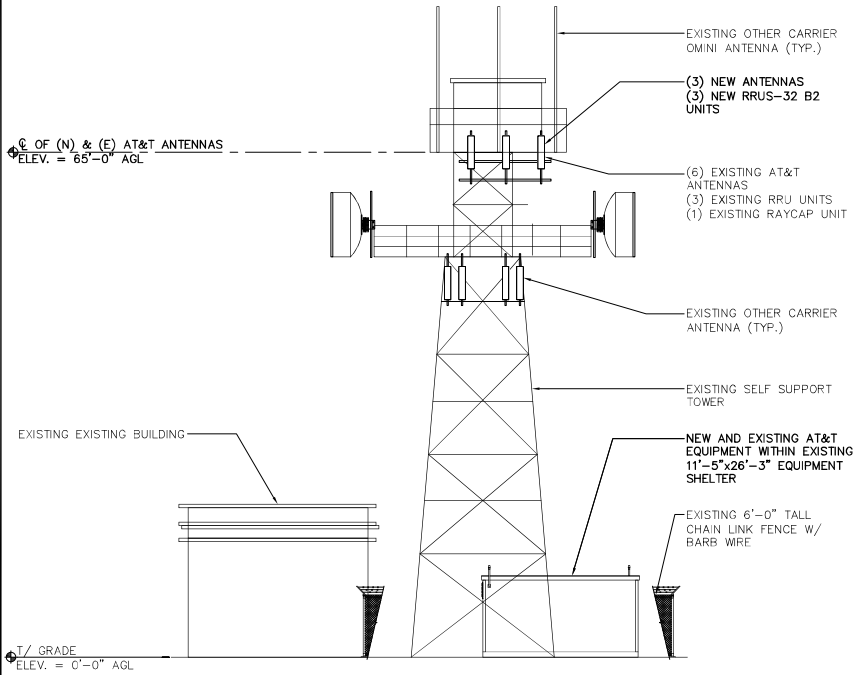
FEC# 2016.0200.0001

NOTES:

1. CALCULATIONS FOR THE STRUCTURE WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
2. CALCULATIONS FOR THE ANTENNA MOUNTS WERE PREPARED BY FULLERTON AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
3. CABLES NOT SHOWN FOR CLARITY



EXISTING ELEVATION — SCALE: 1/16" = 1'-0" | 1



NEW ELEVATION — SCALE: 1/16" = 1'-0" | 2

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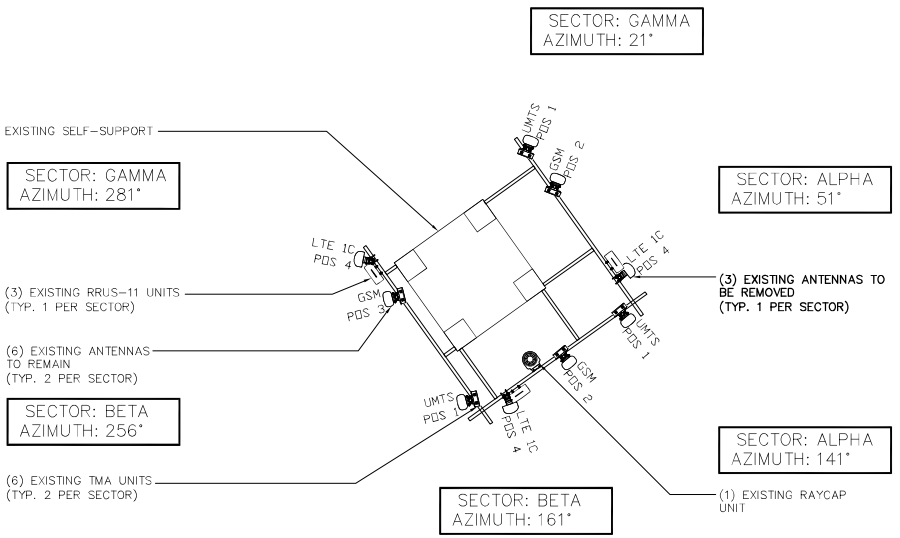
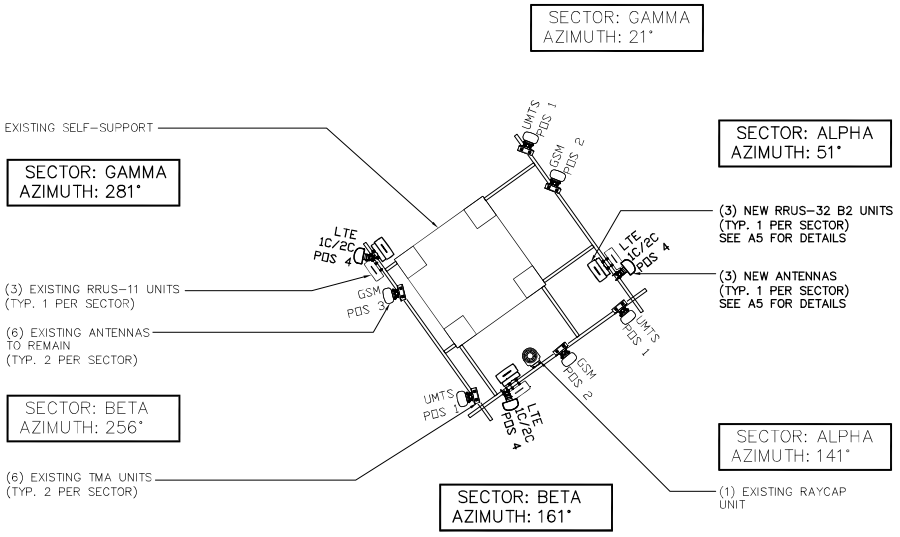
SHEET NAME
ELEVATIONS

SHEET NUMBER
A3

FEC# 2016.0200.0001



EXISTING ANTENNA PLAN — SCALE: 1/8" = 1'-0" | 1



FINAL ANTENNA PLAN — SCALE: 1/8" = 1'-0" | 2

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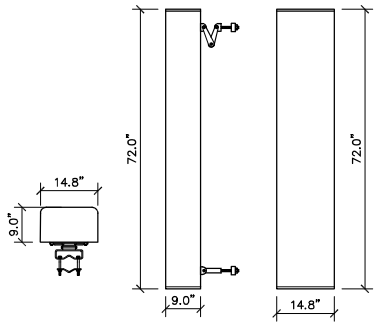
CORNWALL, CT 06753

SHEET NAME
ANTENNA PLANS

SHEET NUMBER
A4

FEC# 2016.0200.0001

SECTORS ALPHA & BETA



PLAN VIEW SIDE VIEW FRONT VIEW

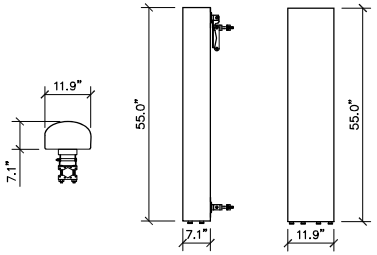
CCI – HPA-65R-BUU-H6

HEXPORT MULTI-BAND ANTENNA

FREQUENCY RANGE	698–806 MHz
	824–894 MHz
	1850–1990 MHz
	1710–1755/2110–2170 MHz
	2305–2360 MHz
ANTENNA	51 Lbs
WITH BRACKET	61 Lbs

ANTENNA SPEC SCALE: N.T.S. 1

SECTOR GAMMA



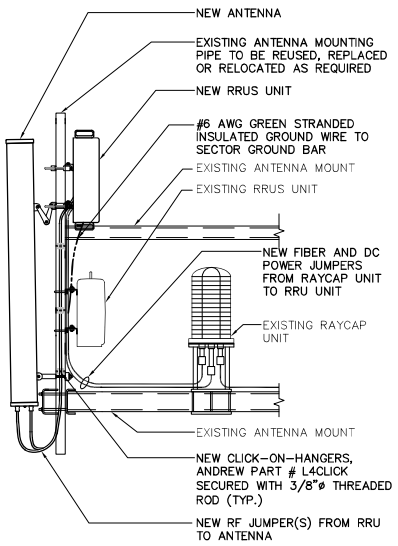
PLAN VIEW SIDE VIEW FRONT VIEW

COMMSCOPE – SBNHH-1D65A

ANDREW® TRI-BAND ANTENNA

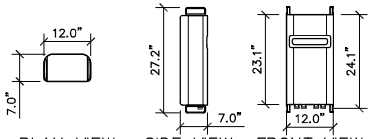
FREQUENCY RANGE	698–806 MHz
	806–896 MHz
	1710–1880 MHz
	1850–1990 MHz
	1920–2180 MHz
	2300–2360 MHz
ANTENNA	33.5 Lbs
BRACKET	12.3 Lbs
TOTAL WEIGHT	45.8 Lbs

ANTENNA SPEC SCALE: N.T.S. 2



ANTENNA SCHEMATIC SCALE: N.T.S. 3

NOT USED SCALE: N.T.S. 4



PLAN VIEW SIDE VIEW FRONT VIEW

ERICSSON – RRUS 32 B2

TECHNOLOGIES: FDD, LTE, GSM & WCDMA

FREQUENCY RANGE: UPLINK	1850–1910 MHz
DOWNLINK	1930–1990 MHz
WEIGHT w/SOLAR SHIELD & HANDLE	50.7 Lbs

RRU SPEC SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6

NOT USED SCALE: N.T.S. 7

NOT USED SCALE: N.T.S. 8

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SITE NAME
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SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
EQUIPMENT DETAILS

SHEET NUMBER
A5

FEC# 2016.0200.0001

FINAL ANTENNA CONFIGURATION AND CABLE SCHEDULE
SUPPLIED BY AT&T WIRELESS, FROM RF CONFIG. DATED (11/22/16)

SECTOR	ANTENNA NUMBER	ANTENNA STATUS & TYPE	ANTENNA MODEL NUMBER	ANTENNA VENDOR	TMA/RRU UNIT	AZIMUTH	ANTENNA CL FROM GROUND	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A-1	(E) UMTS ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	21°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	(1) (E) DC6-48-60-18-8F UNIT
								1-1/4"ø LDF6-50A	110'-0"	
	A-2	(E) GSM ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	21°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	
	A-3	-	-	-	-	-	-	-		
	A-4	**(N) LTE1C/2C ANTENNA**	**HPA-65R-BUU-H6**	**CCI**	(1) EXISTING RRUS-11 UNIT **(1) NEW RRUS-32 B2 UNIT**	51°	65'-0"	(1) EXISTING FIBER CABLE	110'-0"	
								(2) EXISTING DC POWER CABLES	110'-0"	
BETA	B-1	(E) UMTS ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	141°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	
								1-1/4"ø LDF6-50A	110'-0"	
	B-2	(E) GSM ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	141°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	
	B-3	-	-	-	-	-	-	-		
	B-4	**(N) LTE1C/2C ANTENNA**	**HPA-65R-BUU-H6**	**CCI**	(1) EXISTING RRUS-11 UNIT **(1) NEW RRUS-32 B2 UNIT**	161°	65'-0"	SEE ANTENNA A-4 FOR CABLE TYPE AND LENGTH		
GAMMA	C-1	(E) UMTS ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	256°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	
								1-1/4"ø LDF6-50A	110'-0"	
	C-2	-	-	-	-	-	-	-		
	C-3	(E) GSM ANTENNA	7770	POWERWAVE	(1) EXISTING TMA UNIT(S)	256°	65'-0"	1-1/4"ø LDF6-50A	110'-0"	
	C-4	**(N) LTE1C/2C ANTENNA**	**SBNHH-1D65A**	**COMMSCOPE**	(1) EXISTING RRUS-11 UNIT **(1) NEW RRUS-32 B2 UNIT**	281°	65'-0"	SEE ANTENNA A-4 FOR CABLE TYPE AND LENGTH		

ANTENNA & CABLE CONFIGURATION

SCALE: N.T.S. | 1

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SITE NAME
CORNWALL

SITE NUMBER:
CTL01025

SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
ANTENNA & CABLE CONFIGURATION

SHEET NUMBER
A6

FEC# 2016.0200.0001

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT SHADOWING AND TO MEET THE SYSTEM REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY THE HEIGHT OF THE ANTENNA WITH THE AT&T WIRELESS PROJECT MANAGER.
4. VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING ANY ANTENNA MOUNT.
5. UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL MATERIAL NECESSARY.
6. ANTENNA AZIMUTHS ARE DEGREES OFF OF TRUE NORTH, BEARING CLOCKWISE, IN WHICH ANTENNA FACE IS DIRECTED. ALL ANTENNAS (AND SUPPORTING STRUCTURES AS PRACTICAL) SHALL BE ACCURATELY ORIENTED IN THE SPECIFIED DIRECTION.
7. CONTRACTOR SHALL VERIFY ALL RF INFORMATION PRIOR TO CONSTRUCTION.
8. SWEEP TEST SHALL BE PERFORMED BY GENERAL CONTRACTOR AND SUBMITTED TO AT&T WIRELESS CONSTRUCTION SPECIALIST. TEST SHALL BE PERFORMED PER AT&T WIRELESS STANDARDS.
9. CABLE LENGTHS WERE DETERMINED BASED ON THE DESIGN DRAWING. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
10. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

ANTENNA AND CABLING NOTES

SCALE: N.T.S. | 1

RF, DC, & COAX CABLE MARKING LOCATIONS TABLE	
NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

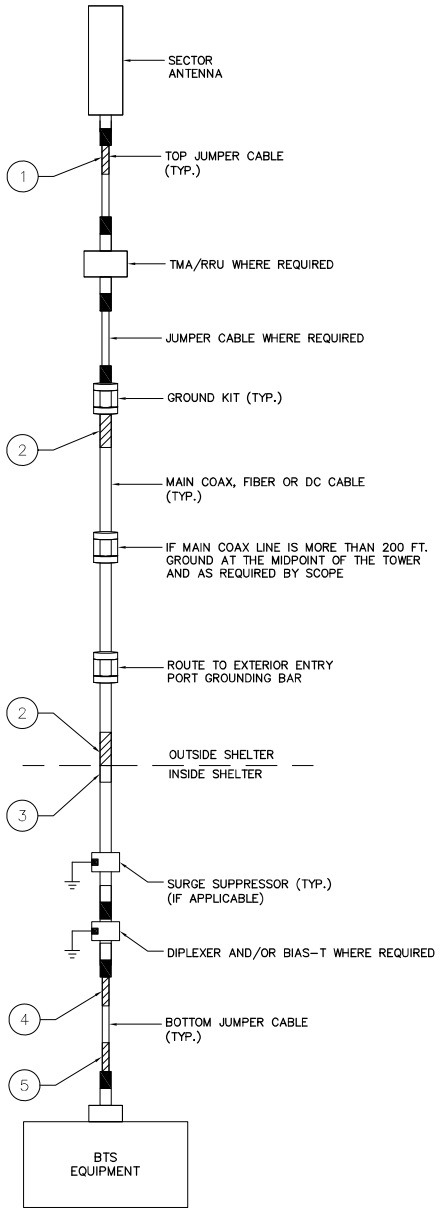
CABLE MARKING DIAGRAM

SCALE: N.T.S. | 2

1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES-RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING NOTES

SCALE: N.T.S. | 3



CABLE COLOR CODING DIAGRAM

SCALE: N.T.S. | 4

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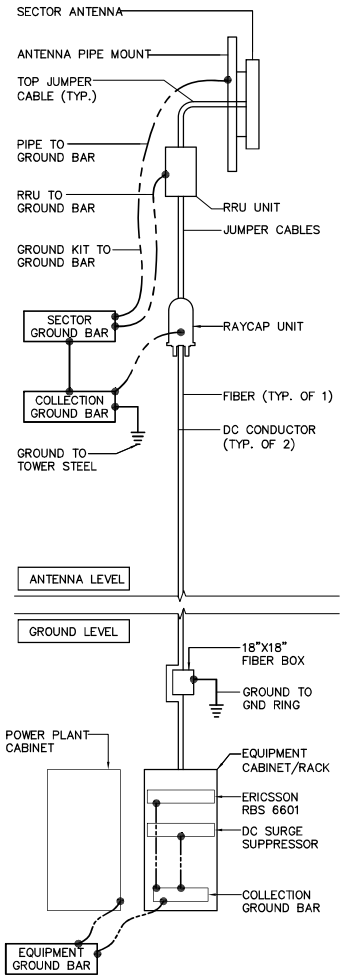
CORNWALL, CT 06753

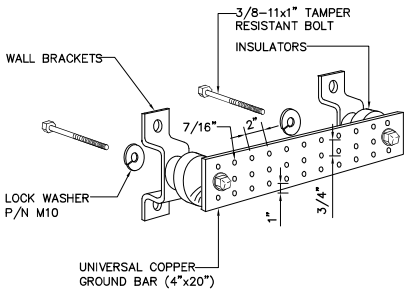
SHEET NAME
CABLE NOTES AND COLOR CODING

SHEET NUMBER
A7

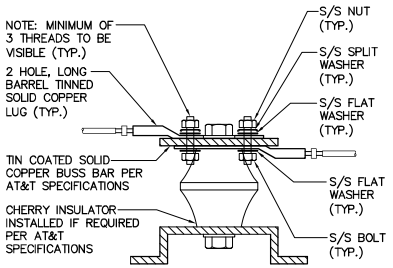
FEC# 2016.0200.0001



GROUNDING SCHEMATIC SCALE: N.T.S. 1

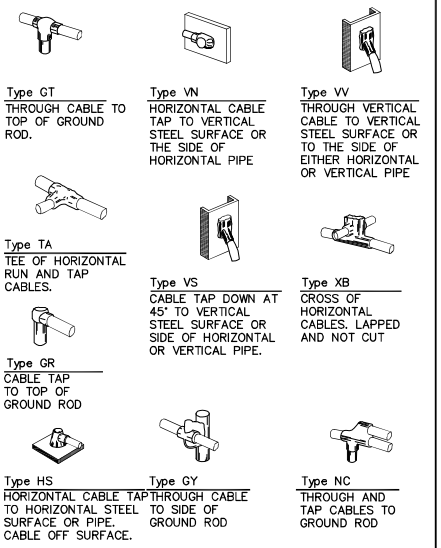


GROUND BAR DETAIL SCALE: N.T.S. 2



NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
2. COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
3. APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

LUG DETAIL SCALE: N.T.S. 3



Type GT
THROUGH CABLE TO TOP OF GROUND ROD.

Type VN
HORIZONTAL CABLE TAP TO VERTICAL STEEL SURFACE OR THE SIDE OF HORIZONTAL PIPE

Type VV
THROUGH VERTICAL CABLE TO VERTICAL STEEL SURFACE OR TO THE SIDE OF EITHER HORIZONTAL OR VERTICAL PIPE

Type TA
TEE OF HORIZONTAL RUN AND TAP CABLES.

Type VS
CABLE TAP DOWN AT 45° TO VERTICAL STEEL SURFACE OR SIDE OF HORIZONTAL OR VERTICAL PIPE.

Type XB
CROSS OF HORIZONTAL CABLES, LAPPED AND NOT CUT

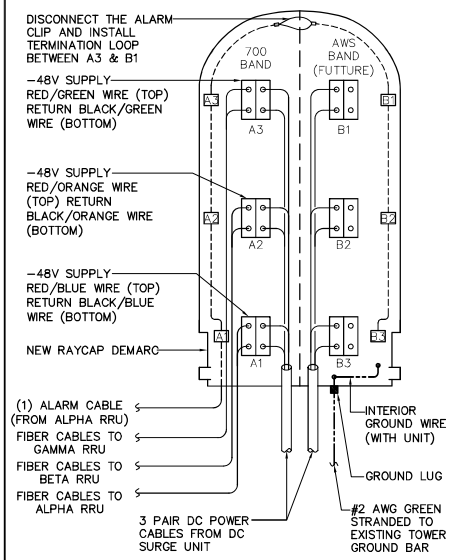
Type GR
CABLE TAP TO TOP OF GROUND ROD

Type HS
HORIZONTAL CABLE TAP TO HORIZONTAL STEEL SURFACE OR PIPE. CABLE OFF SURFACE.

Type GY
THROUGH CABLE TO SIDE OF GROUND ROD

Type NC
THROUGH AND TAP CABLES TO GROUND ROD

EXOTHERMIC WELD DETAILS SCALE: N.T.S. 4



RAYCAP DC POWER AND ALARM DET. SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6

at&t
550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701

smartlink
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

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REV	DATE	DESCRIPTION	BY
0	06/14/16	90% REVIEW	VV
1	09/22/16	FOR PERMIT	KC
2	12/20/16	FOR CONSTRUCTION	KC

I HEREBY CERTIFY THAT THESE DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

STATE OF CONNECTICUT · HENRY M. BELLAGAMBA · 25358 · LICENSED PROFESSIONAL ENGINEER

SITE NAME
CORNWALL

SITE NUMBER:
CTL01025

SITE ADDRESS
36 MOHAWK MOUNTAIN
CORNWALL, CT 06753

SHEET NAME
GROUNDING DETAILS

SHEET NUMBER
A8

FEC# 2016.0200.0001