



January 16, 2017

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

Regarding: Notice of Exempt Modification – RRU Swap & Mount Replacement  
Property Address: 6 Progress Avenue, Seymour, CT 06483  
AT&T Site: CT5633 – Seymour East

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 280-foot self-support tower at the above-referenced address, latitude 41.3914919, longitude -73.0532989. Said self-support is owned by EMAC Communications, LLC. The existing equipment shelter is 20' x 10' totaling 200 square feet.

AT&T desires to modify its existing telecommunications facility by swapping three (3) three remote-radio heads ("RRHs") and replacing the existing mount with a heavy duty sector frame mount. The centerline height of said antennas is and will remain at 160 feet. The proposed installation requires modification to the tower, as indicated on the modification drawings attached. A structural showing the tower will have capacity for this installation once the tower has been modified is also attached.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72 (b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to W. Kurt Miller, First Selectman for the Town of Seymour. A copy of this letter is also being sent to EMAC Communications, LLC, the tower and landowner.

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). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The antennas to be swapped will be installed at the existing height of 160 feet on the 280-foot self-support tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (attached) for AT&T's modified facility is herein provided.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The self-support tower and its foundation can support AT&T's proposed modifications (please see attached structural analysis completed by PiRod Engineering dated November 14, 2016 and modification drawings dated November 18, 2016).

For the foregoing reasons, AT&T respectfully requests that the proposed antenna swap and remote radio head installation be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Sarah Snell  
Site Acquisition Specialist

cc: W. Kurt Miller, First Selectman for the Town of Seymour  
EMAC Communications, LLC, the tower and landowner



# Town of Seymour, CT

## Property Listing Report

Map Block Lot

1-05-12N-0

Account

015124

### Property Information

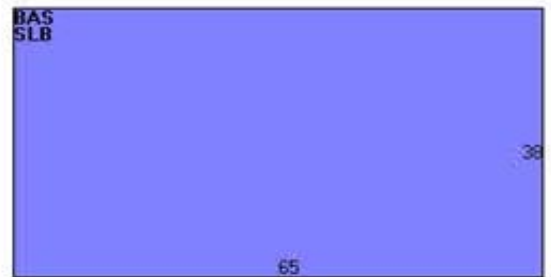
Property Location	<b>6 PROGRESS AVE</b>
Owner	<b>EDMAC LLC</b>
Co-Owner	
Mailing Address	<b>2702 FOREST VIEW LANE</b> <b>KISSIMMEE FL 34744</b>
Land Use	<b>4330 RAD/TV TR</b>
Land Class	<b>I</b>
Zoning Code	<b>GI-2</b>
Census Tract	<b>01301</b>

Neighborhood	<b>D</b>
Acreage	<b>2.15</b>
Utilities	
Lot Setting/Desc	<b>Industrial Level</b>
Additional Info	

### Photo



### Sketch



### Primary Construction Details

Year Built	<b>2001</b>
Stories	<b>1</b>
Building Style	<b>Com Garage</b>
Building Use	<b>Comm/Ind</b>
Building Condition	<b>Average</b>
Floors	<b>Precast Concr</b>
Total Rooms	

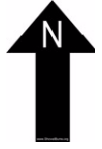
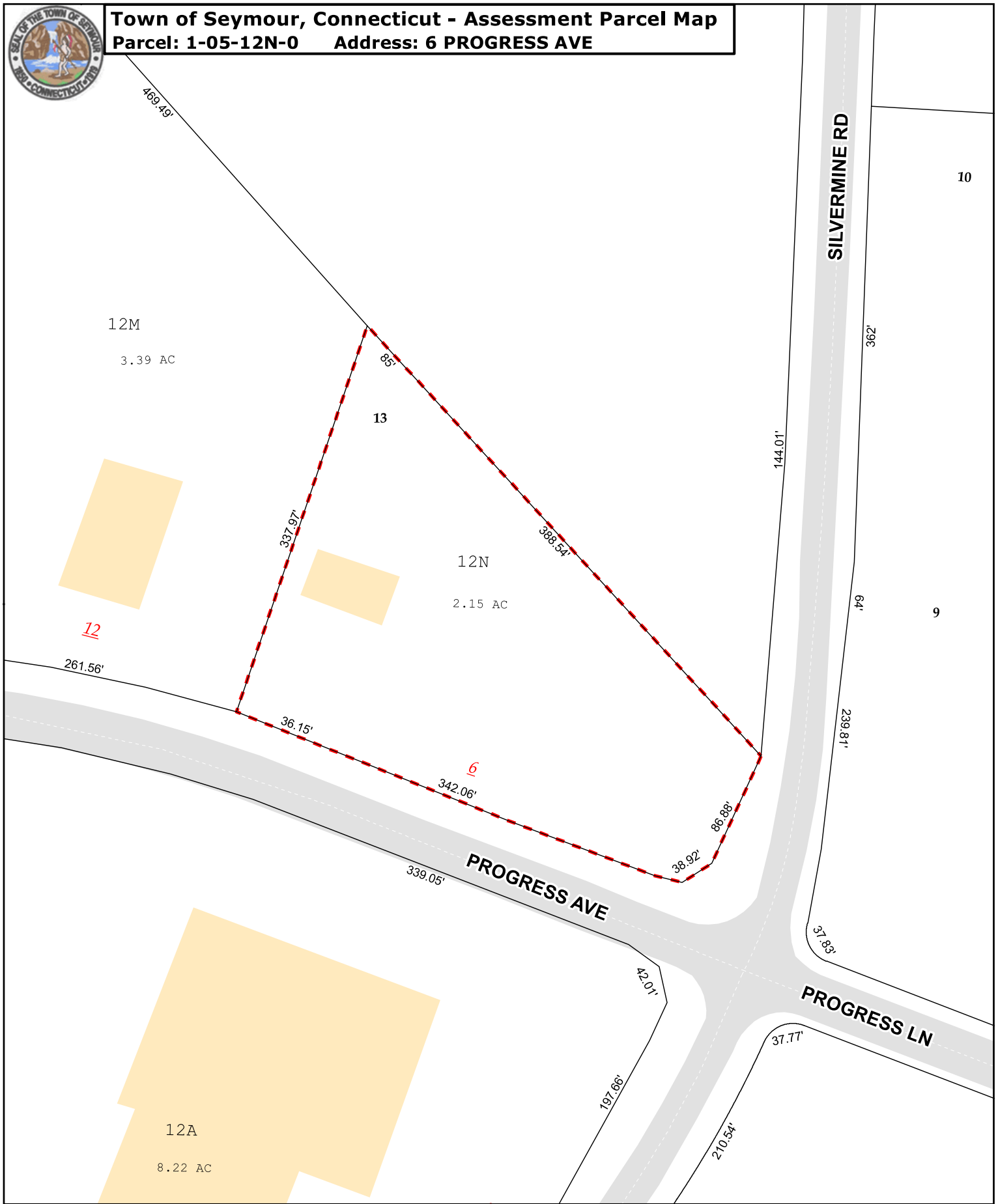
Bedrooms	
Full Bathrooms	<b>0</b>
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	<b>Flat</b>
Roof Cover	<b>Rolled Compos</b>

Exterior Walls	<b>Concr/Cinder</b>
Interior Walls	<b>Minim/Masonry</b>
Heating Type	<b>Hot Air-no Duc</b>
Heating Fuel	<b>Gas</b>
AC Type	<b>None</b>
Gross Bldg Area	<b>4940</b>
Total Living Area	<b>2470</b>

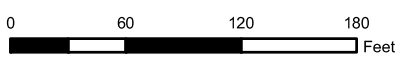




**Town of Seymour, Connecticut - Assessment Parcel Map**  
**Parcel: 1-05-12N-0 Address: 6 PROGRESS AVE**



**Approximate Scale: 1 inch = 100 feet**



**Map Produced:  
July 2016**

**Disclaimer:**  
 This map is for informational purposes only. All information is subject to verification by any user. The Town of Seymour and its mapping contractors assume no legal responsibility for the information contained herein.

**PROJECT INFORMATION**

**SCOPE OF WORK:** UNMANNED COMMUNICATIONS FACILITY MODIFICATIONS INCLUDING THE REPLACEMENT OF EXISTING THREE RRUS-11 RADIOS WITH NEW ERICSSON RRUS-32 B2, REUSING EXISTING SURGE ARRESTOR, FIBER & DC CABLES.

**SITE NUMBER:** CT5633

**SITE NAME:** SEYMOUR – EAST

**SITE ADDRESS:** 6 PROGRESS AVE.  
SEYMOUR, CT 06483

**TOWER OWNER:** EMAC COMMUNICATIONS  
6 PROGRESS AVE.  
SEYMOUR, CT 06483

**APPLICANT:** AT&T MOBILITY  
550 COCHITUATE RD  
SUITES 13 & 14  
FRAMINGHAM, MA 01701

**CONTACT:** TEL 866-915-5600

**COORDINATES** LAT. N41°23'29.37"  
LONG. W73°03'11.87"

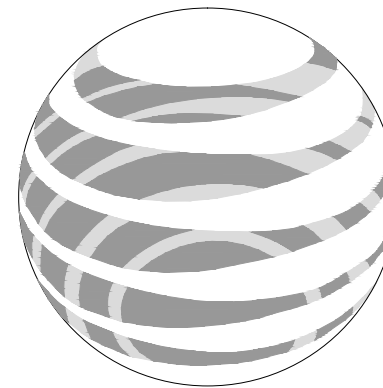
**GROUND LEVEL:** ±482'

**DEED REFERENCE:** N/A

**SITE PARCEL NO.:** N/A

**CURRENT ZONING:** N/A

**HORIZONTAL DATUM:** (NAD) 1983



**at&t**  
Mobility

**SITE NUMBER: CT5633**  
**SITE NAME: SEAMOUR EAST**  
**PROJECT: LTE BWE EXPANSION**

**DRAWING INDEX**

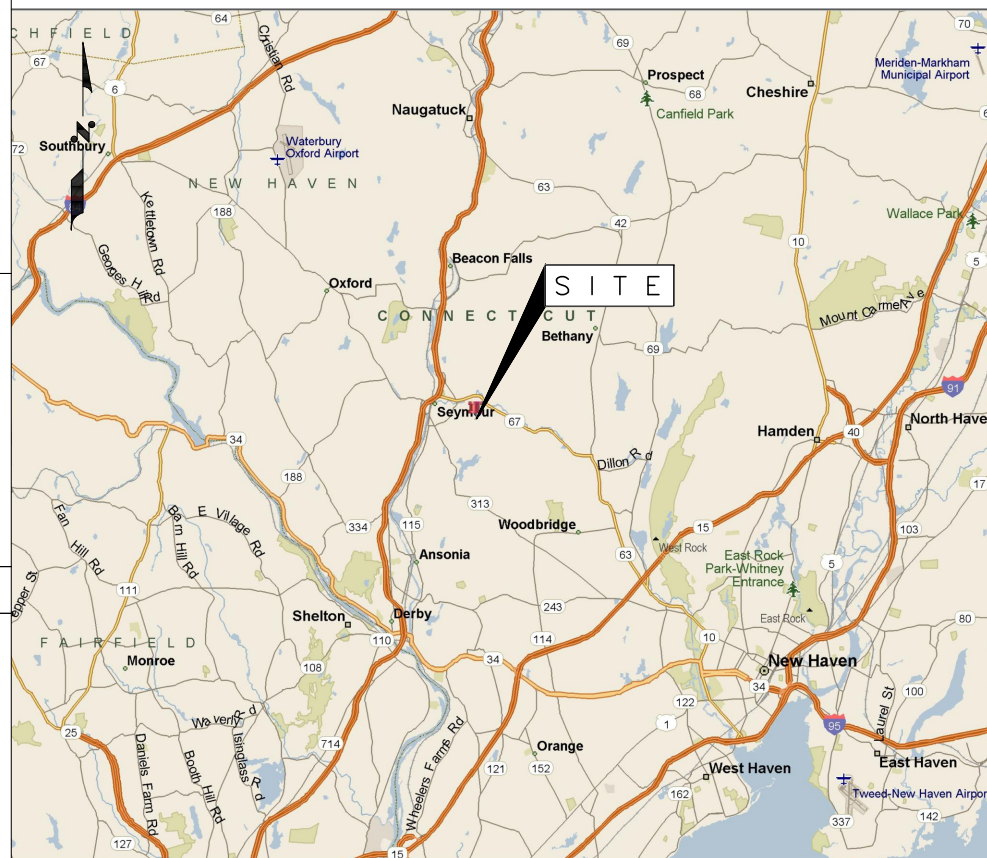
**REV**

<b>01</b>	<b>TITLE SHEET</b>	<b>1</b>
<b>02</b>	<b>NOTES</b>	<b>1</b>
<b>03</b>	<b>SITE PLAN &amp; EQUIPMENT PLAN</b>	<b>1</b>
<b>04</b>	<b>ELEVATION VIEW &amp; ANTENNA LAYOUT</b>	<b>1</b>
<b>05</b>	<b>GROUNDING DETAILS</b>	<b>1</b>

**LOCATION MAP**

**DIRECTIONS:** FROM ROCKY HILL, TAKE I-91 SOUTH TOWARDS NEW HAVEN. TAKE EXIT 17(CT-15 SOUTH). TAKE CT-15 EXIT 59. PROCEED NORTH ON RT-63 (AMITY RD). TURN LEFT ONTO SEYMOUR RD. (RT-67). TURN LEFT ONTO COGWHEEL LANE. TURN RIGHT ONTO PROGRESS AVE. SITE WILL BE ON RIGHT.

**SITE ACCESS:** LOCKED GATE



**APPLICABLE BUILDING CODES AND STANDARDS**

SUBCONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARDS AND SPECIFICATIONS. SUBCONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE:**  
CONNECTICUT STATE BUILDING CODE

**ELECTRICAL CODE:**  
NATIONAL ELECTRICAL CODE LATEST EDITION  
SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.  
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE  
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION  
AMERICAN NATIONAL STANDARDS INSTITUTE/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA) 222-F OR G AS APPLICABLE, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:  
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM  
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

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



AT LEAST 2 WORKING DAYS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CONNECTICUT ONE CALL SYSTEM AT 1-800-922-4455

**CONTACT & UTILITY INFORMATION**

CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	MIGUEL NOBRE	VRG	(508) 981-9590
SITE ACQUISITION:	DAVID COOPER	EMPIRE	(484) 683-5349
CONSTRUCTION:	BILL DANIELS	EMPIRE	(484) 683-5349
<b>UTILITIES</b>			
POWER:	WORK REQUEST GROUP	NATIONAL GRID	(800) 375-7405
TELCO:	.	VERIZON	(800) 941-9900

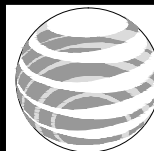


489 Washington Street  
Auburn, MA 01501  
Tel. (508) 981-9590  
Fax (508) 519-8939  
mnobre@verticalresourcesgrp.com



EMPIRE TELECOM USA, LLC  
16 ESQUIRE ROAD  
BILLERICA, MA 01821

**SITE NUMBER: CT5633**  
**SITE NAME: SEYMOUR EAST**  
6 PROGRESS AVE.  
SEYMOUR, CT 06483  
NEW HAVEN COUNTY



**at&t**  
Mobility

550 COCHITUATE RD  
SUITES 13 & 14  
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
1	10/11/16	FOR CONSTRUCTION	G.A.M.		
2	09/30/16	FOR REVIEW	G.A.M.		
SCALE DESIGNED BY: M.N. DRAWN BY: G.A.M.					

AT&T MOBILITY

TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
50-145	01	1



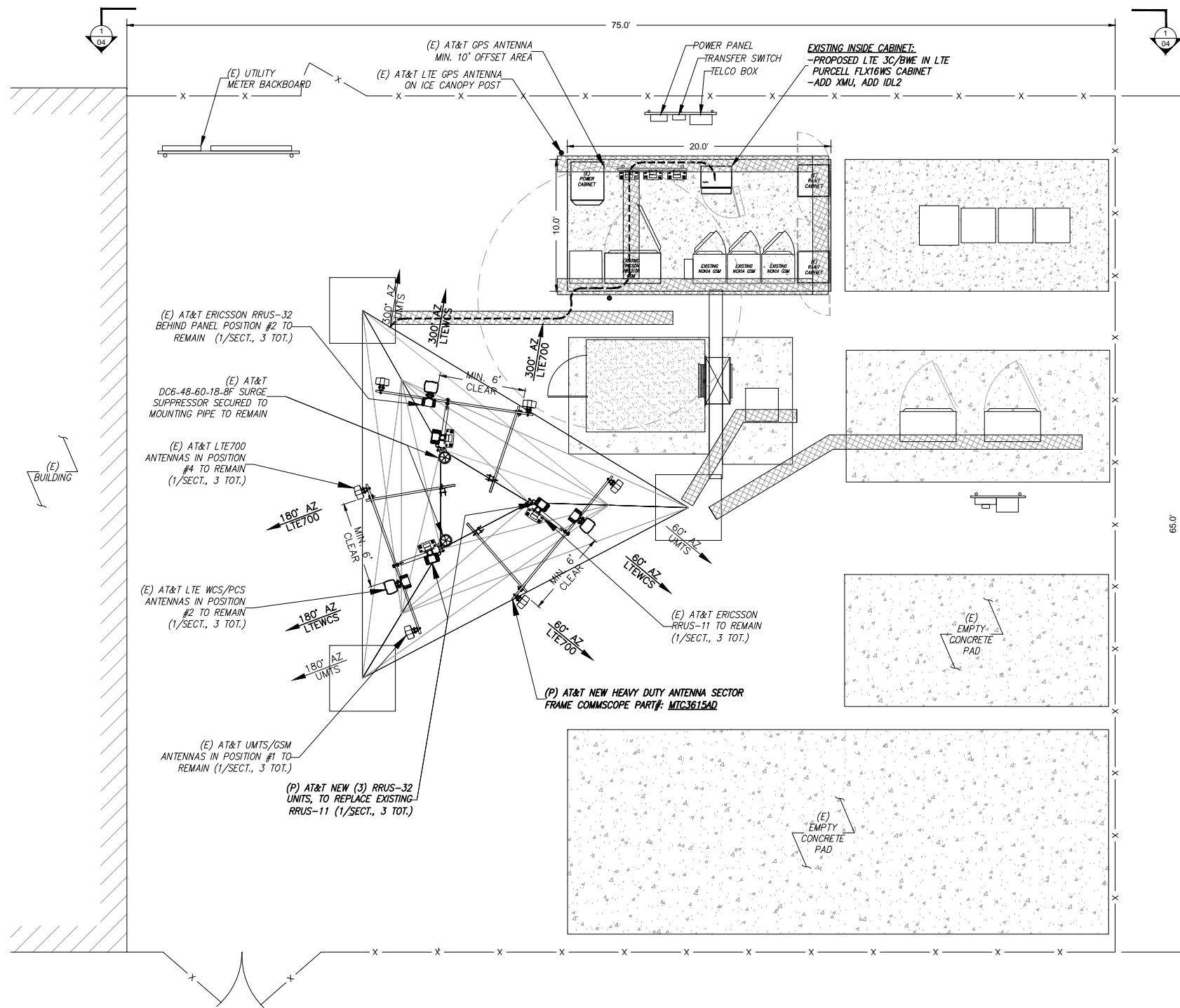


**GENERAL NOTES**

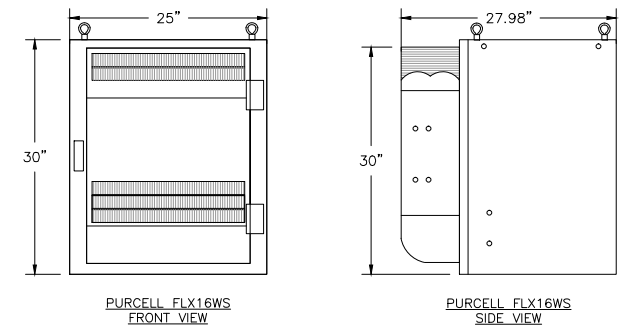
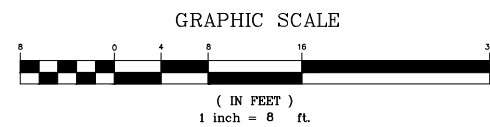
1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND THE POSITIONS OF ALL EQUIPMENT IN THE COMPOUND ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.

2. THE CELLULAR INSTALLATION IS AN UNMANNED PRIVATE AND SECURED COMPOUND. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONSTRUCTION, MAINTENANCE & OPERATION OF PROPOSED TOWER FACILITY WILL BE HELD IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS AND GUIDELINES.



COMPOUND PLAN 1  
SCALE: 1" = 8'

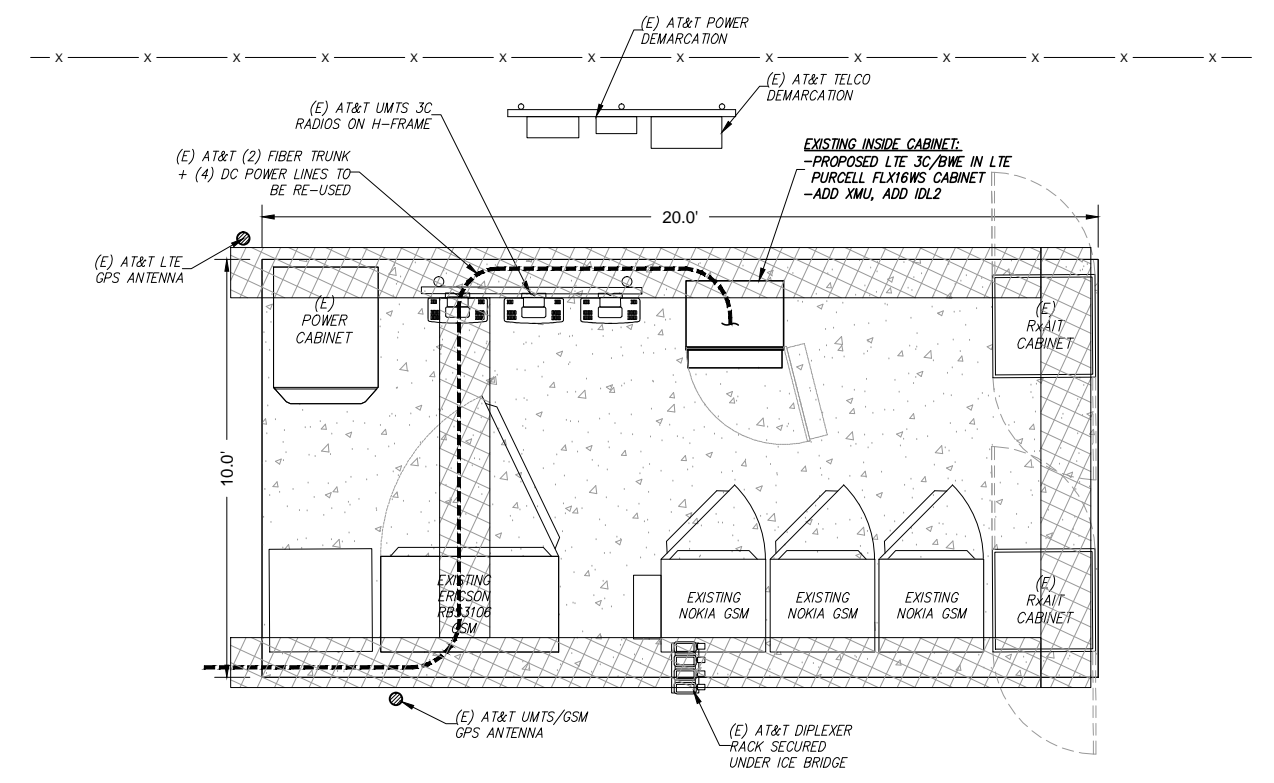


ERICSSON RBS6601 RADIO SPECS	
HEIGHT	2.59"
WIDTH	18.97"
DEPTH	13.78"
WEIGHT (TYP.)	23Lbs
POWER REQUIREMENTS DC	-48V DC (-40 to -57.6)
POWER REQUIREMENTS AC	100 to 250 V AC
IN USE REQUIREMENTS	OPER. TEMP: 41F to 122F

**STANDARD INSTALLATION NOTES**

- CHANGE OUT EXISTING ANTENNAS, INSTALL TMAS & RET SYSTEMS WITH CONTROLS
- INSTALL NEW SURGE ARRESTORS ON GSM, UMTS AND TDMA LINES.
- INSTALL DIPLEXERS, CIU & PDU AND RECONFIGURE GSM & UMTS JUMPERS TO RF REQUIREMENTS.
- PROVIDE SWEEP TESTS AND CLOSEOUT DOCUMENTATION.

EQUIPMENT DETAIL 4  
SCALE: N.T.S.



EQUIPMENT PLAN 2  
SCALE: 1" = 2'

**VRG**  
VERTICAL RESOURCES GRP.  
489 Washington Street  
Auburn, MA 01501  
Tel. (508) 981-9590  
Fax (508) 519-8939  
mnobre@verticalresourcesgrp.com

**EMPIRE telecom**  
EMPIRE TELECOM USA, LLC  
16 ESQUIRE ROAD  
BILLERICA, MA 01821

**SITE NUMBER: CT5633**  
**SITE NAME: SEYMOUR EAST**  
6 PROGRESS AVE.  
SEYMOUR, CT 06483  
NEW HAVEN COUNTY

**at&t**  
Mobility  
550 COCHITUATE RD  
SUITES 13 & 14  
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
△	10/11/16	FOR CONSTRUCTION	G.A.M.		
△	09/30/16	FOR REVIEW	G.A.M.		
SCALE		DESIGNED BY: M.N.	DRAWN BY: G.A.M.		

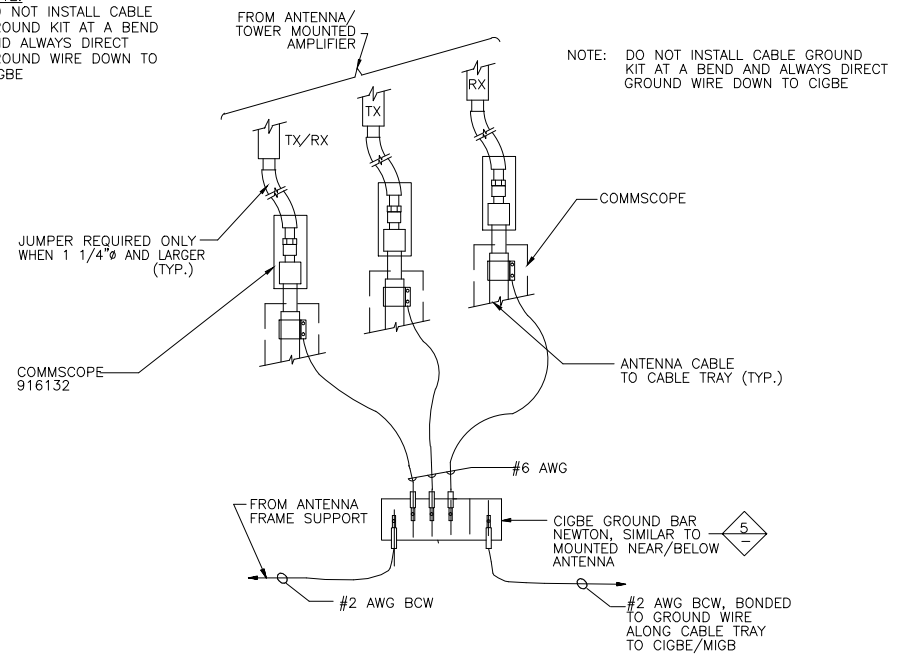
**AT&T MOBILITY**  
**SITE PLAN & EQUIPMENT PLAN**

JOB NUMBER	DRAWING NUMBER	REV
50-145	03	1



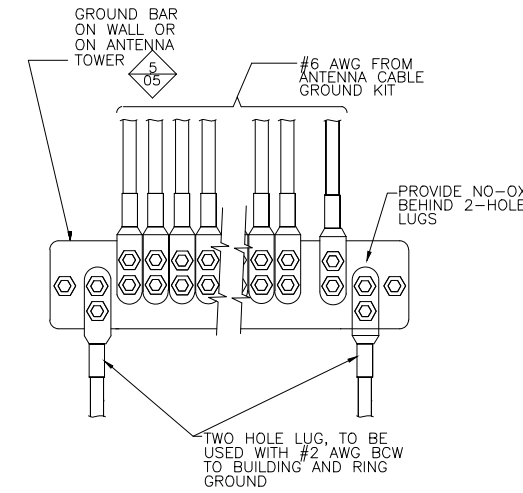


NOTE:  
DO NOT INSTALL CABLE  
GROUND KIT AT A BEND  
AND ALWAYS DIRECT  
GROUND WIRE DOWN TO  
CIGBE



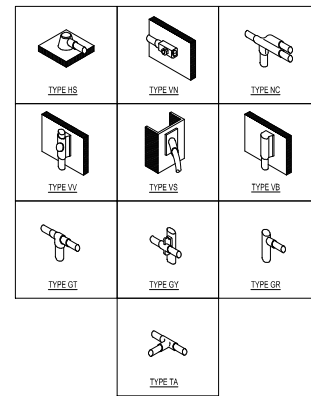
CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE)  
SCALE: N.T.S.

1  
05



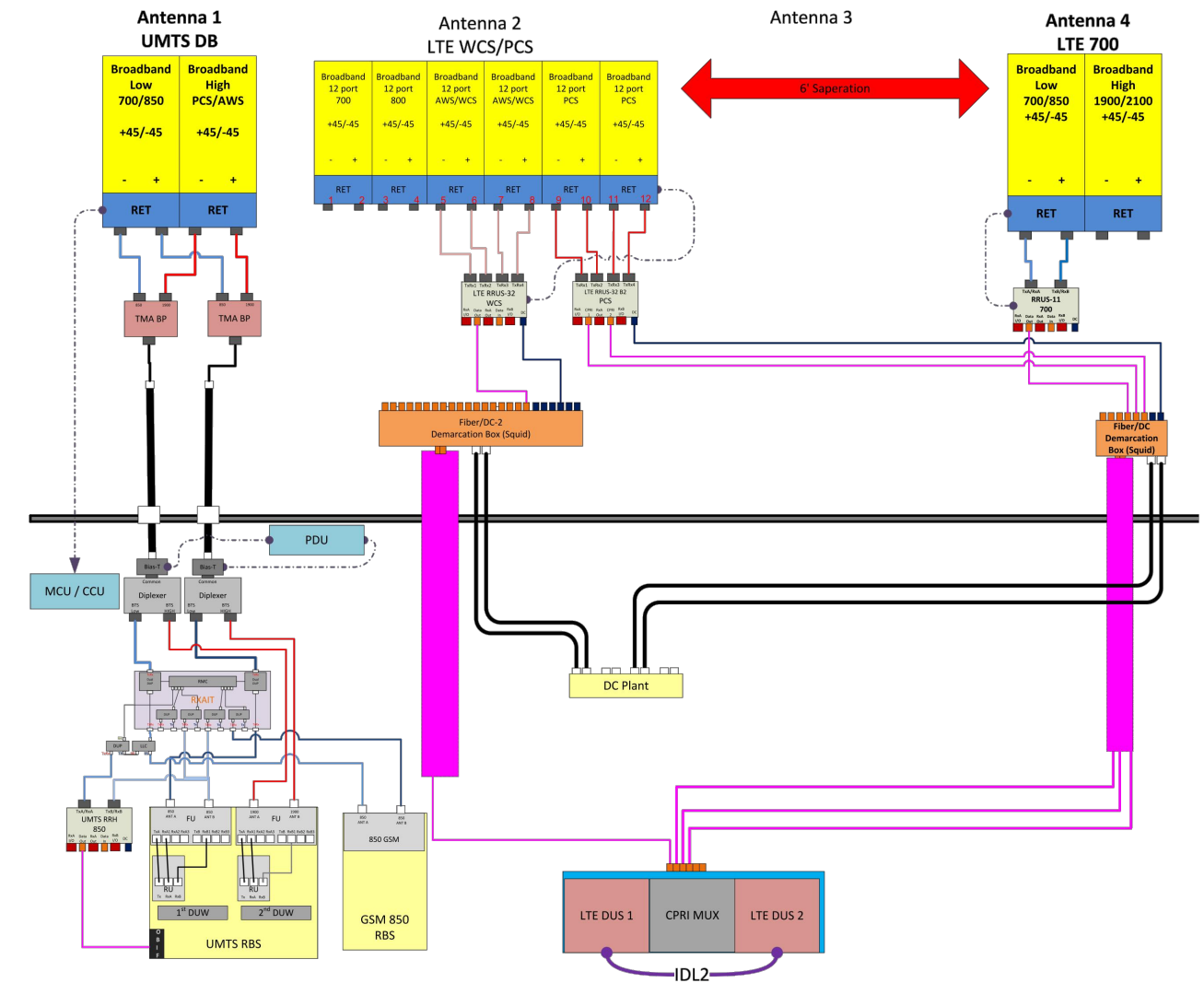
INSTALLATION OF GROUND  
WIRE TO GROUND BAR  
SCALE: N.T.S.

2  
05



GROUNDING CONNECTION DETAIL  
SCALE: N.T.S.

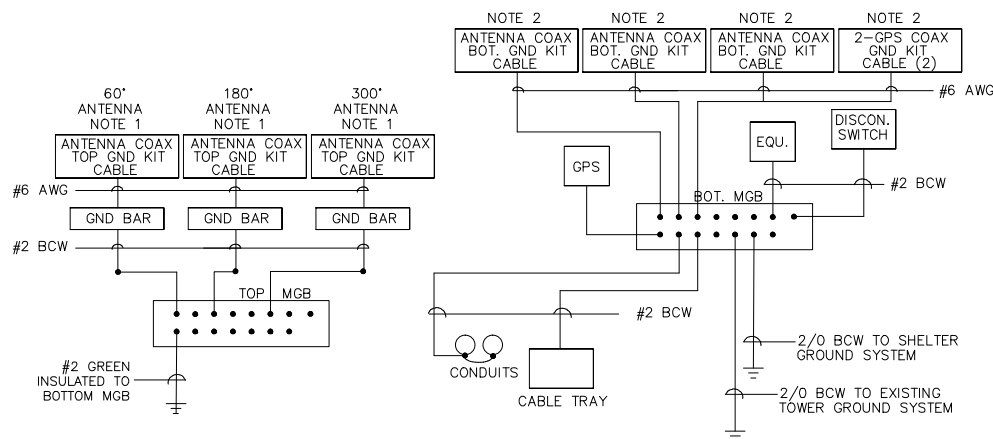
5  
05



NOTE:  
1. CONTRACTOR TO CONFIRM ALL PARTS  
2. INSTALL ALL EQUIPMENT PER MANUFACTURERS  
RECOMMENDATIONS

PLUMBING DIAGRAM FACE  
SCALE: N.T.S.

3  
05

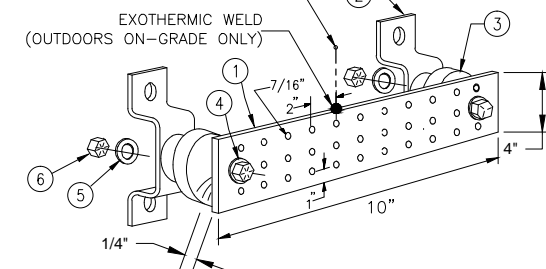


NOTE:  
1. BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE  
2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE

SCHEMATIC GROUNDING DIAGRAM  
SCALE: N.T.S.

4  
05

1-2 AWG TO MAIN GROUND BAR (MGB)  
IN EQUIPMENT SPACE OR BURIED  
GROUND CONDUCTOR AS APPLICABLE



GROUND BAR DETAIL  
SCALE: N.T.S.

6  
05

NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C. OR APPROVED EQUAL			
ITEM	REQ.	PART NO.	DESCRIPTION
①	1	1/4"x4"x12"	PRE DRILLED GND. BAR
②	2	A-6056	WALL MTG. BRKT.
③	2	3061-4	INSULATORS
④	2	3012-13	5/8"-11x4" H.H.C.S.
⑤	4	3015-8	5/8 LOCKWASHER
⑥	2	3014-8	5/8"-11 HEX NUT

# Tower Reanalysis Report

Proposal 185135-5-1

November 14, 2016

U-28 x 280' Tower  
Seymour, CT  
6 Progress Ave  
PiRod Engineering File A-116966

Prepared for  
Vertical Resources Group.  
Attn: Miguel Nobre  
489 Washington Street  
Auburn, MA 01501

Authorization Provided by  
EMAC Communications LLC  
Edward MacConnie  
2702 Forest View Lane  
Kissimmee FL 34744

**This document does not constitute a construction document. All modifications and/or installations of structural members and/or appurtenances shall be completed under the direction of a person qualified to conduct and/or direct the installation procedures in accordance with state, local and national rules.**

*116966 185135-4-1*

Completed under the Supervision and Approval by  
William R. Heiden III, P.E.  
Engineering Group Leader  
e-mail: William.Heiden@valmont.com  
telephone extension: 5243



William R. Heiden III, CT Professional Engineer # 23038

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## 1.0 EXECUTIVE SUMMARY

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This reanalysis was performed by PiRod to determine if the structure is capable of accommodating loading that is different than previous design specifications. This engineering report gives details how the loading changes affect the tower, specifies feasible modifications, and proposes modification materials. **PiRod's engineering study concludes that the tower complies with modifications.** See section 6.0 for details.

## 2.0 ASSUMPTIONS

---

**This engineering study is based on the theoretical capacity of the structure. It is not a condition assessment of the tower.** This report is being provided by PiRod without the benefit of an inspection by PiRod personnel and is based on information supplied by the customer to PiRod. PiRod has made no independent determination, nor is required to, of the accuracy of the information provided. Therefore, unless specifically informed to the contrary by the customer in writing, PiRod assumes the following:

1. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
2. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
3. There is no damage, natural or manmade, to the structure, either gradual or sudden;
4. All connections and guy cables are properly installed;
5. The information concerning the components, existing and proposed, is accurate; and
6. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report.

PiRod recommends that qualified personnel assess the physical condition of the tower, preferably under the direction of a licensed professional engineer. Following is a list of the general areas that PiRod recommends to be inspected.

<u>Tower Structure</u>	<u>Guyed Towers</u>	<u>Foundations</u>	<u>Appurtenances</u>
Tower Sections	Guy Cables	Cracking	Antennas
Bolted Connections	Turnbuckles	Drainage	Mounts
Welded Connections	Preforms	Spalling	Transmission Lines
Plumbness	Guy Lugs	Anchor Bolts	Line Brackets
Corrosion	Thimbles	Settling	Cable Hangers
Linearity	Torque Arms	Grounding	Lighting
Galvanization	Ice Clips	Grout	
Paint	Guy Tensions	Subsoil	
	Anchor Rods	Characteristics	
	Shackles	Erosion	
	Insulators		



### 3.0 TOWER HISTORY

Date of Origination: 4/2000  
 PiRod Model: U-28 x 280' Tower  
 Sold to: EMAC Communications

ORIGINAL DESIGN CRITERIA				
Code/Standard	Wind Loading	Radial Ice	Wind Load Reduction Used	Allowable Stress Increase Used
TIA/EIA-222- F	90 mph fastest mile	no	none	yes
TIA/EIA-222-F	90 mph fastest mile	½" solid	25%	yes

For the structural analysis, the tower and foundation are assumed to exist as shown on the enclosed tower drawing, which is PiRod's latest revision.

### 4.0 CURRENT WIND LOAD REQUIREMENT

We have taken the opportunity to reanalyze this structure using the following wind speed and ice load conditions:

Code/Standard	Wind Loading	Radial Ice	Topography	Structure Class	Exposure
TIA/EIA-222-G	106 mph 3-second gust	NO	1	II	C
	50 mph 3-second gust	0.75"			

Note: Some localities stipulate wind load requirements that are different from that required by the TIA/EIA Standard. Please check with your local building department and verify the required wind load.

## 5.0 ANTENNA LOADING

The tower analysis uses the following antenna loading, which was provided on 11/9/2016.

HEIGHT (FT)	ANTENNAS		ASSUMED CAAC (SQ.FT.)	MOUNTS		LINES			
	#	MODEL		#	MODEL	#	SIZE	BRACKET	
Existing Loading									
Top	1	Beacon				1	1"		
	1	Lightning Rod Ext							
280	1	DB420		1	9-arm Halo	2	1-5/8"	Expandable T	
	1	DB586-XC							
250	3	RR90-17-02DP		3	15' T-frame	12	1-5/8"	"	
	3	LNX-6515DS-A1M		12	2" x 84" Antenna Pipe				
	6	TMA*(12"x12"x8")							
245	1	DB420				1	1-5/8"	"	
235	1	DB225-2-F		1	9-arm Halo	1	1-5/8"	"	
200	9	DB980H120A-M		3	10' Lt T-frames	9	1-5/8"	"	
				9	2" x 60" Antenna Pipe				
190	9	DB980H120A-M		3	10' Lt T-frames	9	1-5/8"	"	
				9	2" x 60" Antenna Pipe				
180	9	DB980H120A-M		3	10' Lt T-frames	9	1-5/8"	"	
				9	2" x 60" Antenna Pipe				
170	3	APXVSPPI8CA20		3	15' T-frame	6	1-5/8"	"	
	3	APXVTM14-ALU-120		9	2" x 60" Antenna Pipe				
	3	FDRRH2X50	1.7						
	3	FDRRH4X40	2.32						
	3	TDRRH8X20	3.7						
150	3	APXV18-206517S0C-ACU				3	1-5/8"	"	
140	3	HBX-6517DS-VTM	Verizon	3	12' V-frames	12	1-5/8"	SE leg	
	3	LNX-6514DS-T4M	10°	12	2" x 72" Pipe mounts	1	1-5/8"	Ext. Double T	
	3	LNX-6514DS-VTM	110°						
	3	BXA-171063-12BF	240°						
	3	RHH_2X40-AWS							
	1	RFS DB-T1-6Z-8AB-0Z box							
	6	RFS FD9R6004/2C-3L							
		Diplexer							
Proposed Loading									
160	3	Kathrein 80010121		AT&T	3	12.5' Sector Frames	2	1-5/8"	"
	6	LGP 21401 TMA		60°		Commscope	1	3/8"	
	3	Quintel QS66512-3		160°		MTC3615	2	3/4"	
	3	KMW AM-X-CD-16-65-00T-RET		300°	9	2" x 72" Antenna Pipe			
	3	Ericsson RRUS-11							
	3	Ericsson RRUS-32							
	1	Racap DC6-48-60-18-8F							
	3	Ericsson RRUS-32 B2							

These antennas, mounts, and lines represent our understanding of the antenna loading required. Please contact us if any discrepancies are evident. If different antennas, mounts, or lines are installed on this

structure, this analysis is invalid. If the lines are mounted on PiRod Double-T, Extended Double-T or Expandable Double-T, they are assumed to be mounted inside the tower and the transmission lines are mounted in a back to back configuration. If any of these brackets cannot be placed inside concerning physical fit, alternatively they can be installed outside the tower, but all the brackets need to be swung back as close as possible to one of the tower faces, to minimize the torque.

\* An asterisk indicates that we were not provided with a value for the effective projected area ( $C_{AAc}$ ), and that the area has been assumed based on any information that was made available. The actual effective projected area for each antenna must be confirmed to be equal to the assumed area listed above. If it is determined that the area is different than that stated for any of the above items, this analysis is invalid.

## 6.0 RESULTS

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With the antennas listed in section 5.0, the following modifications are required for the tower to comply with the indicated code and TIA/EIA Standard listed in section 4.0.

### 6.1 Tower Results – PASS with modifications

- ◆ Change out bracing to 3"x3"x5/16" from 180' to 200' and 220' to 230'
- ◆ Resulting tower capacity after the above modifications are installed is 96.9%

### 6.2 Foundation Results – PASS

The foundation complies without modifications.

The foundation analysis is based on the soil report by AET, Inc., dated 3/31/2000, file #42GT2K.

## 7.0 LIST OF APPENDICES

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Tower elevation drawing

## 8.0 DISCLAIMER

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1. The information and conclusions contained in this Report were determined by the application of the then current "state of the art" engineering and analysis procedures and formulae, and Valmont Structures<sup>(1)</sup> assumes no obligation to revise any of the information or conclusions contained in this Report in the event such engineering and analysis procedures and formulae are hereafter modified or revised.
2. In no event shall Valmont Structures be liable for any incidental, consequential, indirect, special or punitive damages (including without limitation lost profits) arising out of any claim associated with the use of this report (whether for breach of contract, tort, negligence or other form of action), irrespective of whether Valmont Structures has been advised of the possibility of any such loss or damage. In no event shall Valmont Structures' total, cumulative liability to the customer exceed the amount paid by customer for the preparation of this report.
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4. Valmont Structures makes no warranties, expressed or implied, in connection with this Report as to any other matter whatsoever, and in particular, any and all warranties of merchantability or fitness for a particular purpose are hereby expressly disclaimed. Valmont Structures further expressly disclaims any liability arising from material, fabrication, and erection deficiencies. This Report is being provided by Valmont Structures without the benefit of an inspection by Valmont Structures personnel and is based solely on information supplied by the Customer to Valmont Structures. Valmont Structures has made no independent determination, nor is it required to do so, of the accuracy of the information provided by Customer. Therefore, unless specifically informed to the contrary by the Customer in writing, the following assumptions apply to the Report:
  - A. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
  - B. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
  - C. There is no damage, natural or manmade, to the structure, either gradual or sudden;
  - D. All connections are properly installed;
  - E. The information concerning the components, existing and proposed, is accurate; and
  - F. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report. Examples include but are not limited to replacement or strengthening of bracing members, reinforcing vertical members in any manner, adding additional bracing, or extending tower.
6. All representations and recommendations and conclusions are based upon the information contained and set forth herein. If Customer is aware of any information which is contrary to that which is contained herein, or if Customer is aware of any defects arising from the original design, material, fabrication, and erection deficiencies Customer must disregard this Report and immediately contact Valmont Structures.

<sup>(1)</sup> Valmont Structures is the Structures Division of Valmont Industries, Inc., and performs engineering services under the engineering corporation name PiRod, Inc.







## RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT5633

Seymour East  
6 Progress Ave.  
Seymour, CT 06483

**October 30, 2016**

**EBI Project Number: 6216004900**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general public allowable limit:	<b>6.18 %</b>



October 30, 2016

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

## Emissions Analysis for Site: **CT5633 – Seymour East**

EBI Consulting was directed to analyze the proposed AT&T facility located at **6 Progress Ave., Seymour, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

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

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channels (2300 MHz (WCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Powerwave 800-10121, Quintel QS66512-2 and the KMW AM-X-CD-16-65-00T-RET** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerlines of the proposed antennas are **160 feet** above ground level (AGL) for **Sector A**, **160 feet** above ground level (AGL) for **Sector B** and **160 feet** above ground level (AGL) for Sector C.
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



## AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	Kathrein 800-10121	Make / Model:	Kathrein 800-10121	Make / Model:	Kathrein 800-10121
Gain:	11.45 / 14.35 dBd	Gain:	11.45 / 14.35 dBd	Gain:	11.45 / 14.35 dBd
Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts
ERP (W):	3,309.26	ERP (W):	3,309.26	ERP (W):	3,309.26
Antenna A1 MPE%	<b>0.70 %</b>	Antenna B1 MPE%	<b>0.70 %</b>	Antenna C1 MPE%	<b>0.70 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	Quintel QS66512-2	Make / Model:	Quintel QS66512-2	Make / Model:	Quintel QS66512-2
Gain:	14.85 / 13.85 dBd	Gain:	14.85 / 13.85 dBd	Gain:	14.85 / 13.85 dBd
Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>
Frequency Bands	2300 MHz (WCS) / 1900 MHz (PCS)	Frequency Bands	2300 MHz (WCS) / 1900 MHz (PCS)	Frequency Bands	2300 MHz (WCS) / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	6,577.84	ERP (W):	6,577.84	ERP (W):	6,577.84
Antenna A2 MPE%	<b>1.00 %</b>	Antenna B2 MPE%	<b>1.00 %</b>	Antenna C2 MPE%	<b>1.00 %</b>
Antenna #:	<b>3</b>	Antenna #:	<b>3</b>	Antenna #:	<b>3</b>
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.85 dBd	Gain:	13.85 dBd	Gain:	13.85 dBd
Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>	Height (AGL):	<b>160 feet</b>
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,595.26	ERP (W):	2,595.26	ERP (W):	2,595.26
Antenna A3 MPE%	<b>0.84 %</b>	Antenna B3 MPE%	<b>0.84 %</b>	Antenna C3 MPE%	<b>0.84 %</b>

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	<b>2.54 %</b>
Verizon Wireless	2.41 %
T-Mobile	0.28 %
Sprint	0.56 %
Mike Gardella	0.06 %
Town	0.33 %
<b>Site Total MPE %:</b>	<b>6.18 %</b>

AT&T Sector A Total:	2.54 %
AT&T Sector B Total:	2.54 %
AT&T Sector C Total:	2.54 %
<b>Site Total:</b>	<b>6.18 %</b>

AT&T Frequency Band / Technology	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
AT&T 850 MHz UMTS	2	418.91	160	1.27	850 MHz	567	0.22%
AT&T 1900 MHz (PCS) UMTS	2	816.81	160	2.48	1900 MHz (PCS)	1000	0.25%
AT&T 850 MHz GSM	2	418.91	160	1.27	850 MHz	567	0.22%
AT&T 2300 MHz (WCS) LTE	2	1,832.95	160	5.56	2300 MHz (WCS)	1000	0.56%
AT&T 1900 MHz (PCS) LTE	2	1,455.97	160	4.41	1900 MHz (PCS)	1000	0.44%
AT&T 700 MHz LTE	2	1,297.63	160	3.93	700 MHz	467	0.84%
					<b>Total*:</b>		<b>2.54%</b>

\*NOTE: Totals may vary by 0.01% due to summing of remainders





## Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	2.54 %
Sector B:	2.54 %
Sector C:	2.54 %
AT&T Maximum Total (per sector):	2.54 %
Site Total:	6.18 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **6.18 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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