

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 case 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

Map Block Lot

1-05-12N-0

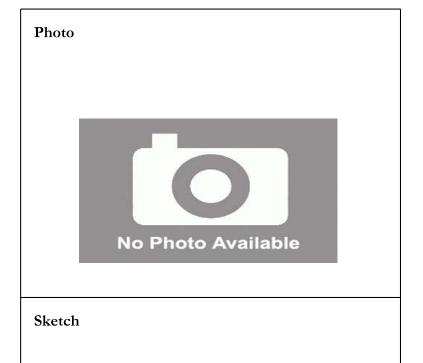
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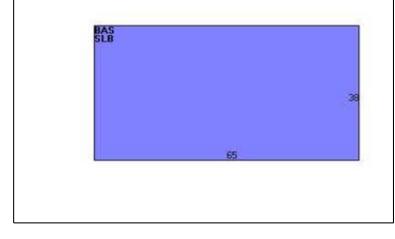
015124

# **Property Information**

Property Location	6 PROGRESS AV	/E	
Owner	EDMAC LLC		
Co-Owner			
Mailing Address	2702 FOREST VI	EW LANE	
Maining Address	KISSIMMEE	FL	34744
Land Use	4330 RAD	/TV TR	
Land Class	I		
Zoning Code	GI-2		
Census Tract	01301		

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





# **Primary Construction Details**

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

Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Flat
Roof Cover	Rolled Compos

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

Map Block Lot

1-05-12N-0

Account

015124

# Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	52000	36400
Extras	0	0
Improvements	59000	41300
Outbuildings	7000	4900
Land	157900	110530
Total	216900	151830

### **Sub Areas**

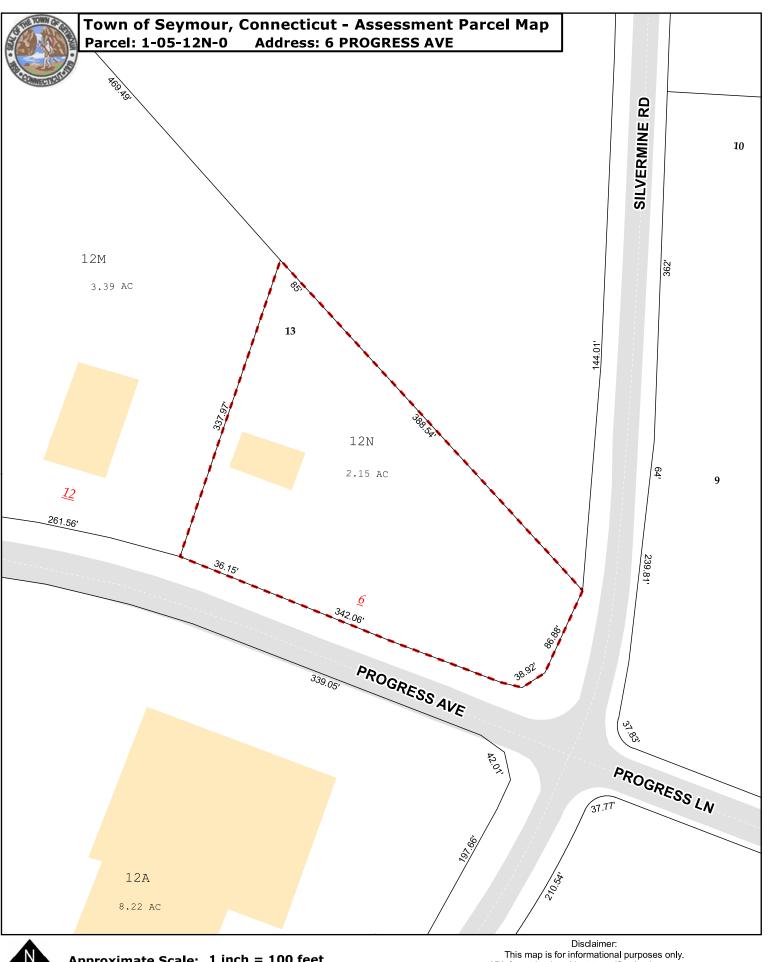
Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2470	2470
Slab	2470	0
Total Area	4940	2470

# Outbuilding and Extra Items

Туре	Description
Paving Asph.	7000 S.F.
Fence 8 Ft	215 L.F.

# Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
EDMAC LLC	00285/0679	9/25/2001	
MACCONNIE EDWARD H	00269/0272	6/28/2000	
EMAC COMMUNICATIONS CO INC	00266/0050	2/11/2000	110000
HUBBELL REALTY DEVELOPMENT	00150/0777		0





Approximate Scale: 1 inch = 100 feet

180

Map Produced: **July 2016** 

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

TOWER OWNER:

**CONTACT:** 

SITE NAME: SEYMOUR - EAST

SITE ADDRESS: 6 PROGRESS AVE. SEYMOUR, CT 06483

EMAC COMMUNICATIONS

6 PROGRESS AVE. SEYMOUR, CT 06483

AT&T MOBILITY

APPLICANT: AT&T MOBILITY 550 COCHITUATE RD

SUITES 13 & 14 FRAMINGHAM, MA 01701

TEL 866-915-5600

FRAMINGHAM, MA 0170

COORDINATES LAT. N41°23'29.37"

LONG W7.3°0.3'11.87"

GROUND LEVEL: ±482'

DEED REFERENCE: N/A

SITE PARCEL NO.: N/A

CURRENT ZONING: N/A

HORIZONTAL DATUM: (NAD) 1983



**SITE NUMBER: CT5633** 

SITE NAME: SEAMOUR EAST PROJECT: LTE BWE EXPANSION

# DRAWING INDEX REV 01 TITLE SHEET 1 02 NOTES 1 03 SITE PLAN & EQUIPMENT PLAN 1 04 ELEVATION VIEW & ANTENNA LAYOUT 1 05 GROUNDING DETAILS 1



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
ENGINEERING:
SITE ACQUISITION:
CONSTRUCTION:
UTILITIES
POWER:

CONTACT MIGUEL NOBRE DAVID COOPER BILL DANIELS

BILL DANIELS
WORK REQUEST GR

WORK REQUEST GROUP

COMPANY VRG EMPIRE EMPIRE

NATIONAL GRID

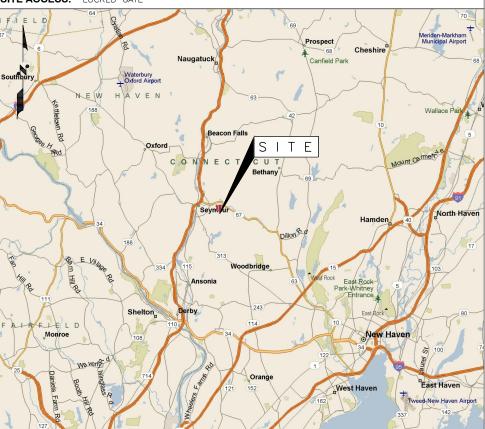
PHONE NO. (508) 981-9590 (484) 683-5349 (484) 683-5349

> (800) 375-7405 (800) 941-9900

### **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.

VRG
VERTICAL RESOURCES GRP.

TELCO:

489 Washington Street Auburn, MA 01501 Tel. (508) 981— 9590 Fax (508) 519— 8939 mnobre@verticalresourcesarp.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



7	10/11/16		FOR CONSTRUCTION					
7	09/30/16		FOR REVIEW					
0.	DATE		REVISION				СНК	APP'D
CALE			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. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR - PRIME CONTRACTOR
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)

AT&T WRFLESS - ORIGINAL EQUIPMENT MANUFACTURER

. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL WIST THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND 3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR

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

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

4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.

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

HE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. ROUTING OF CONDUIT FOR POWER AND TELCO SHALL BE APPROVED BY OWNER OF SITE.

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

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

### **SITE WORK GENERAL NOTES**

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

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

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.

6. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.

7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE OWNER SPECIFICATION FOR SITE SIGNAGE.

8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.

9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN

10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE

11. THE AREAS OF THE OWNERS 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.

12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

13. ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK

### STRUCTURAL STEEL NOTES:

ALL STEFL WORK SHALL RE GALVANIZED IN ACCORDANCE WITH ASTM A123 (HOT-DIP) UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL BE H-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED

3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. STEEL FASTENER HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT-DIP)

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE, THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWNGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI OR

6. ALL STRUCTURAL STEEL SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK

#### **CONCRETE AND REINFORCING STEEL NOTES:**

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND
- 2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE, A HIGHER STRENGTH (4000 PSI) MAY BE USED.
- CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS
- 4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST FARTH.......3 II CONCRETE EXPOSED TO EARTH OR WEATHER:

#6 AND LARGER #5 AND SMALLER & WWF...... 1 1/2 INCH

CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT

SLAB AND WALL BEAMS AND COLUMNS......1 1/2 INCH

5. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO. IN ACCORDANCE WITH ACL 301 SECTION 4.2.4.

- 6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD HILTI OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER; (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,

(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.

FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST

- 8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- 9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.
- 10. ALL CONCRETE SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK

### **SOIL COMPACTION NOTES FOR SLAB ON GRADE:**

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL, EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- 2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR
- 3. AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION. THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD
- 4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL, GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
- 5. AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOF ROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDILIM SIZED VIRRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR
- 6. COMPACTION CRITERIA FOR OTHER FILL AREAS ON SITE SHALL MEET THE SAME REQUIREMENTS AS NOTED ABOVE.
- SOIL COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

### **COMPACTION EQUIPMENT:**

HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

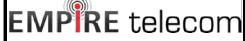
### **ELECTRICAL INSTALLATION NOTES**

- 1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES
- 2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT
- 3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL
- 4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- 5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE
- 6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION. OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC
- 7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PERMANENT LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING. PHASE CONFIGURATION. WIRE CONFIGURATION. POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S). NO HAND WRITTEN LABELS
- 8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED. NO HAND WRITTEN LABELS ALLOWED.
- 9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- 10. POWER, CONTROL, AND FQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- 11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY OPFRATION: LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- 12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT. SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 'C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED. UNLESS OTHERWISE SPECIFIED.
- 13. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- 14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND

### **ELECTRICAL INSTALLATION NOTES (cont.)**

- 15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR
- 16. ELECTRICAL METALLIC TUBING (EMT). ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- 17. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE
- 18. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND: DIRECT BURIED. IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- 19. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- 20. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- 21. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- 22. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- 23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS
- 24. MFTAL RECEPTACLE. SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- 25. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- 26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- 27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

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



FMPIRE TELECOM USA, LLC

16 ESQUIRE ROAD

BILLERICA, MA 01821

SITE NUMBER: CT5633 SITE NAME: SEYMOUR 6 PROGRESS AVE.

SEYMOUR, CT 06483

NEW HAVEN COUNTY



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ı	Λ	10/11/16	FOR CONSTRUCTION			G.A.M.		
ı	△	09/30/16	FOR REVIEW			G.A.M.		
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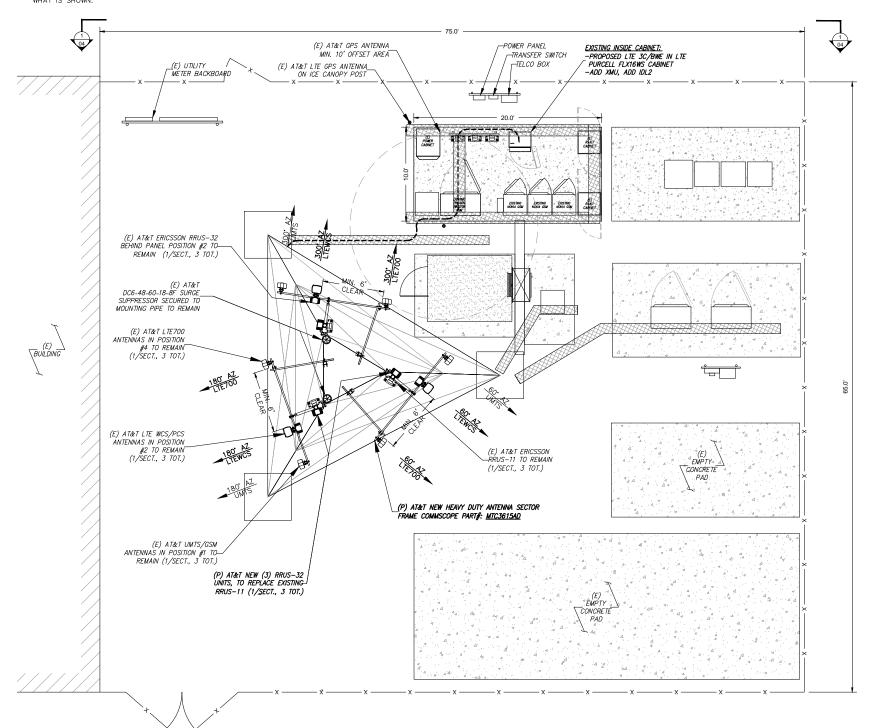
AT&T MOBILITY

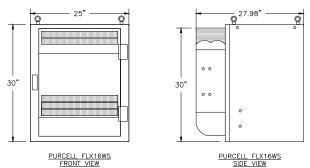
NOTES

OB NUMBER DRAWING NUMBER 50 - 14502

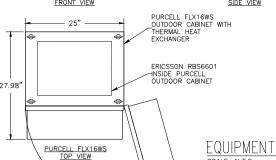


- 1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND THE POSITIONS OF ALL EQUIPMENT IN THE COMPOUND ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.
- 2. THE CELLULAR INSTALLATION IS AN 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.
- . CONSTRUCTION, MAINTENANCE & OPERATION OF PROPOSED TOWER FACILITY WILL BE HELD IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS AND GUIDELINES.





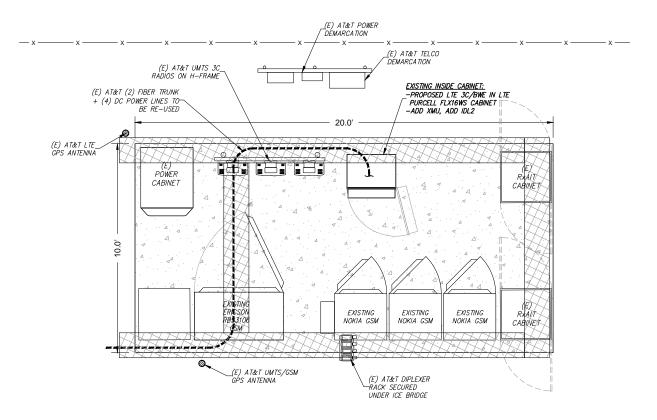




### STANDARD INSTALLATION NOTES

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













489 Washington Street Auburn, MA 01501 Tel. (508) 981— 9590 Tel. (508) 519— 8939 Machine Street College 1993



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

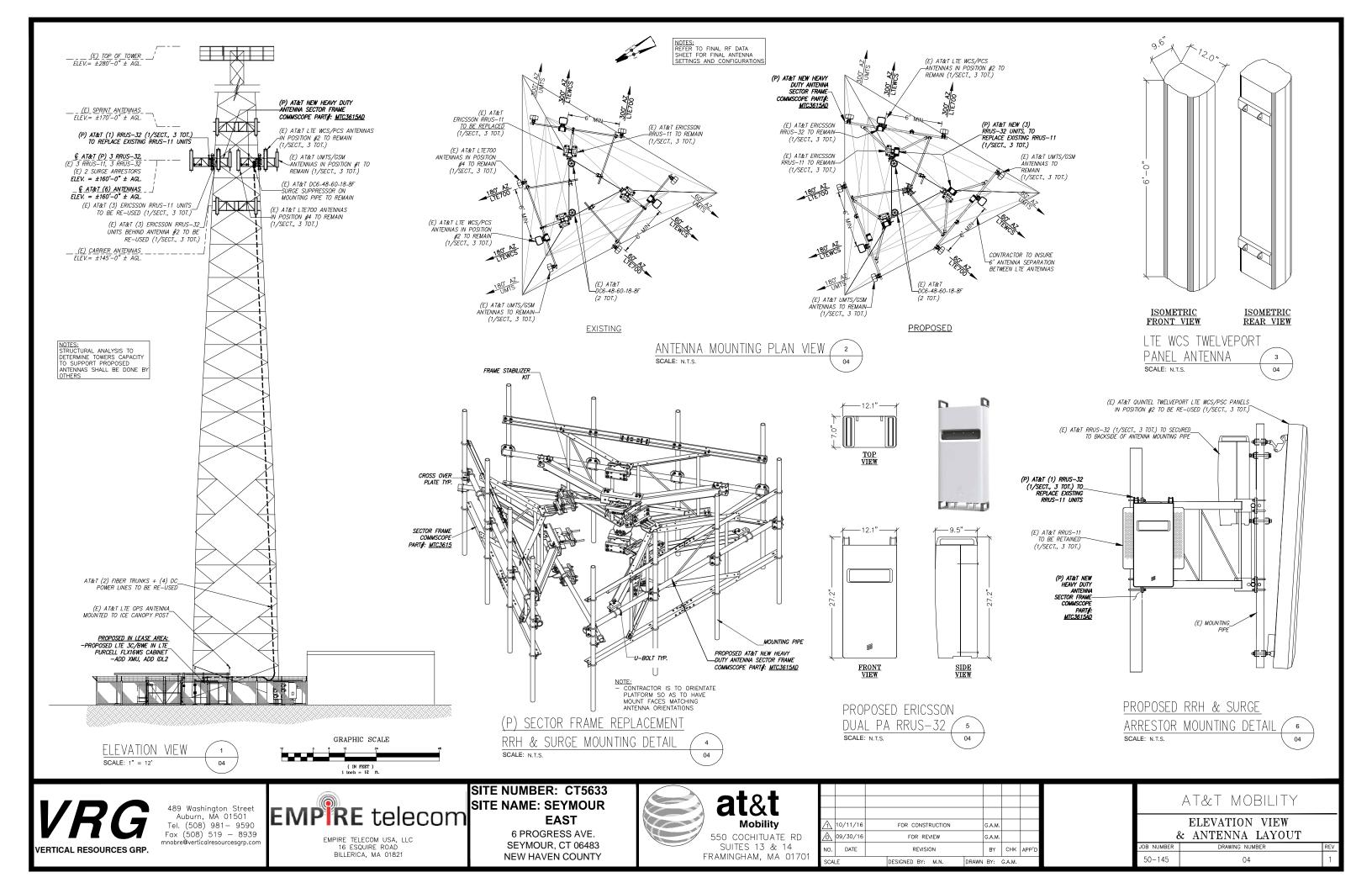


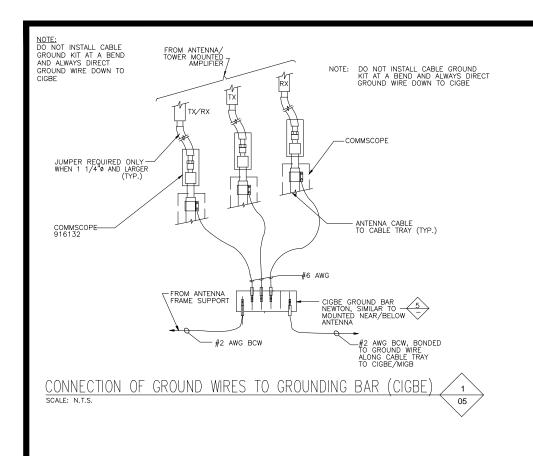
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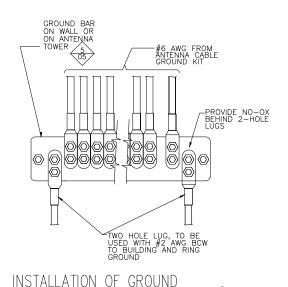
AT&T MOBILITY

SITE PLAN & EQUIPMENT PLAN

JOB NUMBER	DRAWING NUMBER	REV
50-145	03	1







WIRE TO GROUND BAR

SCALE: N.T.S.

-GPS COA) GND KIT CABLE (2)

DISCON. SWITCH

-2/0 BCW TO SHELTER GROUND SYSTEM

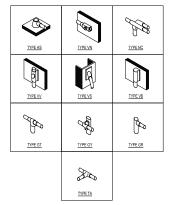
-2/0 BCW TO EXISTING TOWER GROUND SYSTEM

вот. мсв

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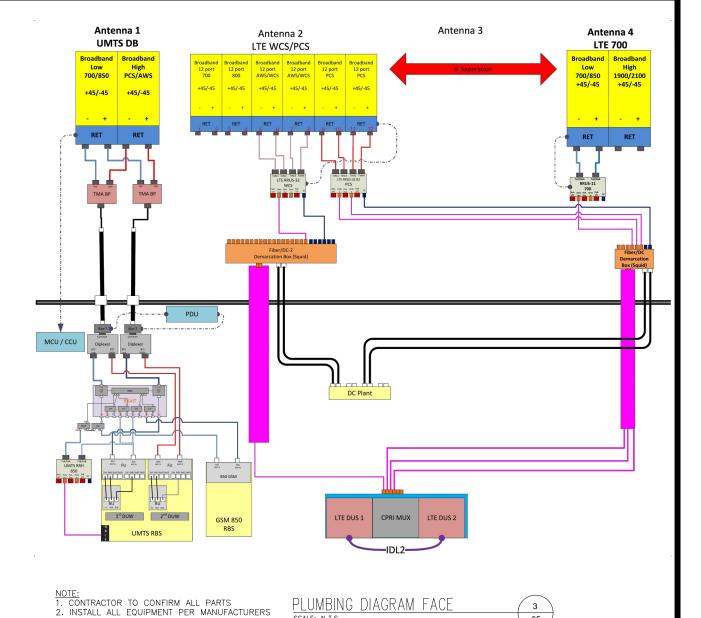
#2 BCW

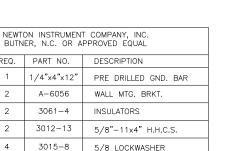
- #6 AWG



2 05

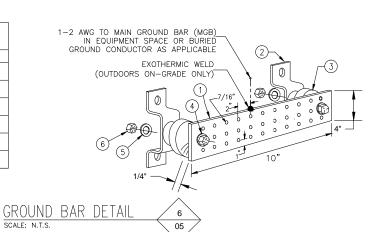






5/8"-11 HEX NUT

RECOMMENDATIONS





489 Washington Street Auburn, MA 01501

Tel. (508) 981- 9590

Fax (508) 519 - 8939

TOP MGB . . . . . . .

180° ANTENNA NOTE 1

GND BAR

ANTENNA NOTE 1

GND BAR

300° ANTENNA NOTE 1

GND BAR

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





GPS

CABLE TRAY

# EMPIRE telecom

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

SITE NUMBER: CT5633 SITE NAME: SEYMOUR **EAST** 



3014-8

ITEM REQ.

(1)

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(5)

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AT&T MOBILITY GROUNDING DETAILS

05

DRAWING NUMBER OB NUMBER 50-145 05



6 PROGRESS AVE. SEYMOUR, CT 06483

**NEW HAVEN COUNTY** 

# **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

# TABLE OF CONTENTS

Description	Page No.
1.0 EXECUTIVE SUMMARY	
2.0 ASSUMPTIONS	1
3.0 TOWER HISTORY	2
4.0 CURRENT WIND LOAD REQUIREMENT	2
5.0 ANTENNA LOADING	3
6.0 RESULTS	
6.1 Tower Modifications	4
6.2 Foundation Modifications	4
7.0 LIST OF APPENDICES	4
8.0 DISCLAIMER	5

### 1.0 EXECUTIVE SUMMARY

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.

		T 1 4	<b>A</b>
Tower Structure	Guyed Towers	<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					
Wind Load Allowable Stress						
Code/Standard	Wind Loading	Radial Ice	Reduction Used	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
	106 mph 3-second gust	NO	1	II	C
TIA/EIA-222-G	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.

		A	NTENNAS	ASSUMED		Mounts			Lines
HEIGHT (FT)	#	Mode	ı	CAAC (SQ.FT.)			#	SIZE	BRACKET
(11)		THOOL			sting Lo	5 50 - 620 - 63 - 63		****	
Т	1	Beaco		1		1	1	1"	
Тор	1 1	,	ii ing Rod Ext		ŀ		1	1	
280	1	DB42			1	9-arm Halo	2	1-5/8	Expandable T
200	1	DB58			1	, uiii 1	_		
250	3	L	-17-02DP		3	15' T-frame	12	1-5/8	• "
	3	LNX-	6515DS-A1M		12	2" x 84" Antenn	a Pipe		
	6		*(12"x12"x8")						
245	1	DB42	0				1	1-5/8	, ,,
235	1	DB22	5-2-F		1	9-arm Halo	1	1-5/8'	"
200	9	DB98	0H120A-M		3	10' Lt T-frames	9	1-5/8'	5 65
					9	2" x 60" Antenn			
190	9	DB98	0H120A-M		3	10' Lt T-frames	9	1-5/8	, "
					9	2" x 60" Antenn		1 (10)	, «
180	9	DB98	0H120A-M		3	10' Lt T-frames	1	1-5/8'	"
100	2	4.03/3	IODD100100		9	2" x 60" Antenn	ia Pipe 6	1-5/8'	· · · · · · · · · · · · · · · · · · ·
170	3		/SPP18CA20 /TM14-ALU-I20		9	2" x 60 " Anten	E .	1-3/6	
	3	1	H2X50	1.7		2 X OU AIRCIN	na i ipe		
	3	1	H4X40	2.32					l I
	3	1	tH8X20	3.7					
150	3		718-206517S0C-ACU				3	1-5/8'	, ,,
140	3	UDV	6517DS-VTM	Verizon	3	12' V-frames	12	12 1-5/8" SE le	
140	3	E .	6514DS-T4M	10°,	12	2" x 72" Pipe m	1	1-5/8'	
	3		6514DS-VTM	110°,	1			Hybri	1
	3		171063-12BF	240°				flex	
	3	RHH	2X40-AWS						
	1		B-T1-6Z-8AB-0Z box						
	6	1	D9R6004/2C-3L						
		Dip	lexer	<u> </u>	1.7	1.			
				Pro	posed L	oading			
16	)	3	Kathrein 80010121		АТ&Т	1 - 1 -	ctor Frames	2	1-5/8" "
		6	LGP 21401 TMA		60°	Comm		1	3/8"
		3	Quintel QS66512-3		160°	MTC3		2	3/4"
		3	KMW AM-X-CD-16-6	5-00T-	300°	9 2" x 72 '	' Antenna Pipe	•	
		_	RET						
		3	Ericsson RRUS-11						
		3	Ericsson RRUS-32	E					
		1 3	Racap DC6-48-60-18-8 Ericsson RRUS-32 B2	T					
		1.3	EHOSSUH KKUS-32 DZ					I	

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

PiRod, Inc.
Seymour U-28 x 280'

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 (CAAc), 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

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.

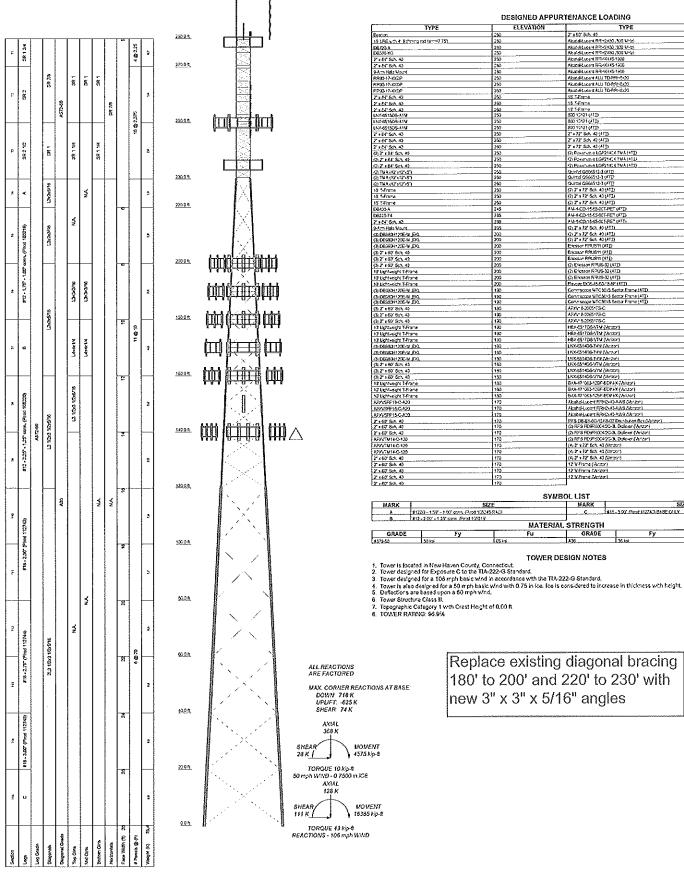
# 7.0 LIST OF APPENDICES

Tower elevation drawing

### 8.0 DISCLAIMER

- 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 (1) 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.
- 3. Valmont Structures shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Valmont Structures personnel, including but not limited to, any services rendered by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer for the quality of work performed by them
- 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.
- (1) Valmont Structures is the Structures Division of Valmont Industries, Inc., and performs engineering services under the engineering corporation name PiRod, Inc.

PiRod, Inc.



Replace existing diagonal bracing 180' to 200' and 220' to 230' with new 3" x 3" x 5/16" angles

ELEVATION



# 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:	COMPLIANT				
Site total MPE% of					
FCC general public	6.18 %				
allowable limit:					



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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu$ W/cm2). The number of  $\mu$ W/cm² 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 ( $\mu$ W/cm²). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467  $\mu$ W/cm² and 567  $\mu$ W/cm² respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000  $\mu$ W/cm². 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:	В	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
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):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
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%	0.70 %	Antenna B1 MPE%	0.70 %	Antenna C1 MPE%	0.70 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
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):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
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%	1.00 %	Antenna B2 MPE%	1.00 %	Antenna C2 MPE%	1.00 %
Antenna #:	3	Antenna #:	3	Antenna #:	3
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):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
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%	0.84 %	Antenna B3 MPE%	0.84 %	Antenna C3 MPE%	0.84 %

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

AT&T Sector A Total:	2.54 %
AT&T Sector B Total:	2.54 %
AT&T Sector C Total:	2.54 %
Site Total:	6.18 %

AT&T _ Frequency Band / Technology	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (µW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	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%
						Total*:	2.54%

\*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	2.54 %
(per sector):	
Site Total:	6.18 %
Site Compliance Status:	COMPLIANT

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.