smartlink

TS-AT&T-130-131213-Revised

Via Overnight Delivery

April 30, 2014

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

Re:	**Request to Revise a Previously Approved Tower Share Application**
Property Address:	**111 Upper Fish Rock Road, Southbury, CT 06488 (the "Property")**
Applicant:	**New Cingular Wireless PCS, LLC d/b/a AT&T ("AT&T")**

Dear Ms. Bachman:

On behalf of AT&T, please accept this correspondence as a request to revise a previously approved tower share installation. Enclosed please find an original and fifteen (15) copies of the correspondence package along with a check in the amount of six hundred and twenty five ($625.00) dollars.

On December 12, 2013 AT&T submitted an application to the Connecticut Siting Council (the "Council") for an order to approve the shared use of an existing tower and compound on the Property (the "Tower" and collectively, the "Facility"), pursuant to Connecticut General Status § 16-50aa, as amended (the "Statute"). During its hearing on January 23, 2014, the Council approved AT&T's shared use application. Subsequently, the Council issued the approval order on January 27, 2014 (see Tab 1 attached herewith).

AT&T requests to revise its previously approved installation as follows:

- Panel Antennas (no change):
  - Previous Design: Twelve (12), eight foot (8') panel antennas
  - Revised Design: Twelve (12), eight foot (8') panel antennas
    - Note that the number and size of the antennas has not changed but their models have (see attached structural analysis)

- Remote Radio Head:
  - Previous Design: 15
  - Revised Design: 27
- Equipment Shelter
  - Previous Design: 11.5' x 16'
  - Revised Design: 11.5' x 16'
- Structural Analysis Conclusion:
  - Previous Design: "the subject tower is adequate to support…"
  - Revised Design: "the subject tower is adequate to support…"
- Power Density Calculations:
  - Previous Design:
    - AT&T's MPE: 12.71%
    - Total MPE: 47.38%
  - Revised Design
    - AT&T's MPE: 27.30%
    - Total MPE: 61.97%

AT&T's proposed revisions to its previously approved shared use installation continue to meet all of the requirements set forth in the Statute. AT&T's revised design is technically, legally, economically and environmentally feasible, will meet public safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. Consequently, AT&T respectfully requests that the Council issue an order approving the proposed sharing use of the Facility.

Sincerely,

Steven J. Quinn

Enclosures
Cc w/enclosurers:
Ed Edelson, First Selectman, Town of Southbury
Carl M. Ferencek and Marilyn T. Ferencek, Property Owners

A REQUEST TO THE CONNECTICUT SITING COUNCIL
TO REVISED A PREVIOUSLY APPROVED
APPLICATION FOR A SHARED USE OF AN EXISTING TOWER

APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

111 Upper Fish Rock Road
Southbury, CT 06488

PREPARED BY: Steven J. Quinn
Real Estate and Land Use Specialist
Smartlink, LLC
33 Boston Post Road West
Marlborough, Massachusetts 01752
774-219-8022
steven.quinn@smartlinkllc.com

Date Submitted: April 30, 2014

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APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

111 Upper Fish Rock Road
Southbury, CT 06488

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

January 27, 2014

Adam Braillard
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-130-131213** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 111 Upper Fish Rock Road, Southbury, Connecticut.

Dear Mr. Braillard:

At a public meeting held January 23, 2014, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated December 12, 2013, including the placement of all necessary equipment and shelters within the tower compound.

CSC
CONNECTICUT SITING COUNCIL

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein

Robert Stein
Chairman

RS/CDM/cm

c: The Honorable Ed Edelson, First Selectman, Town of Southbury
Mark G. Massoud, Zoning Enforcement Officer, Town of Southbury
Cellco Partnership d/b/a Verizon Wireless

CERTIFICATE OF SERVICE

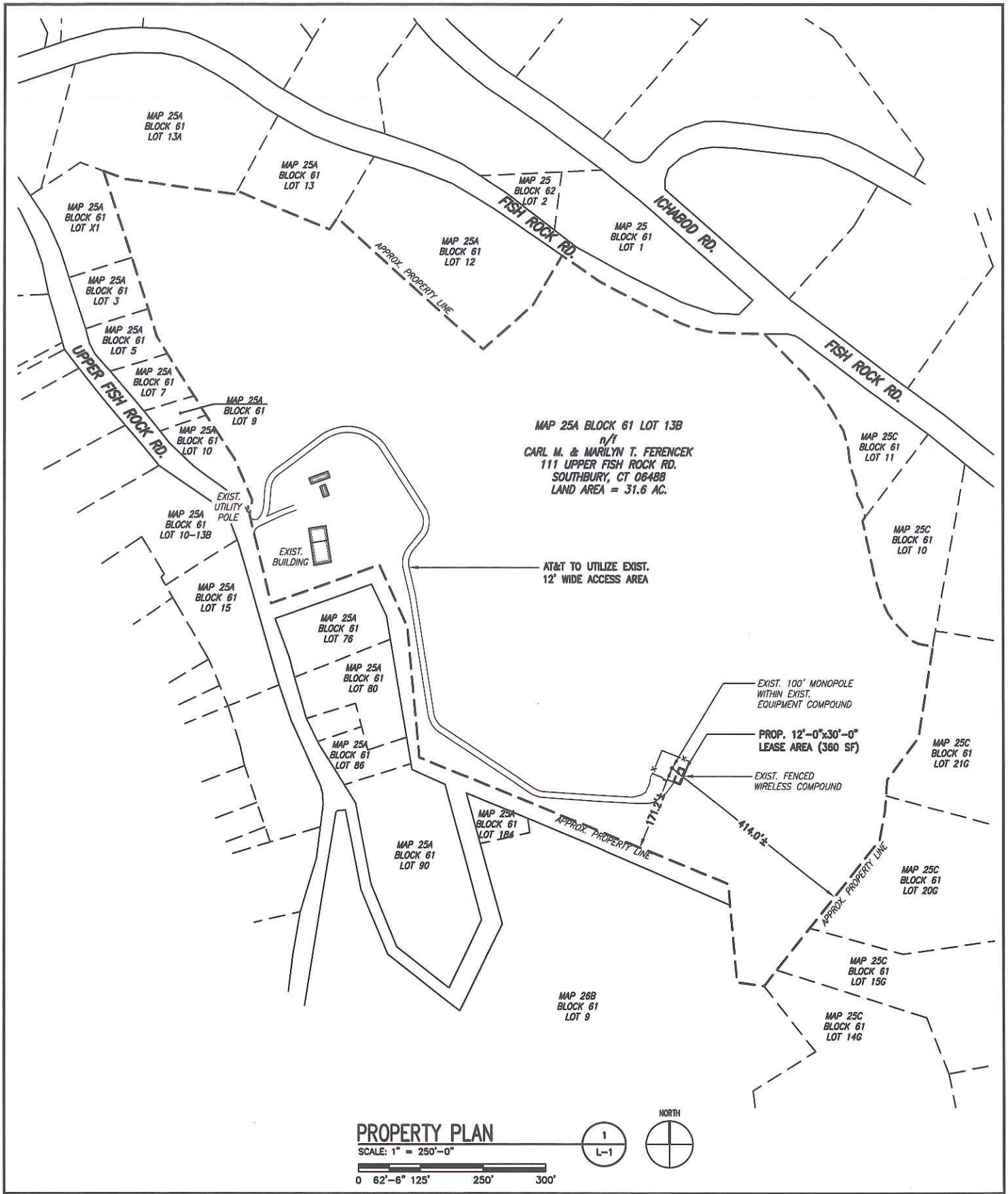
This is to certify that on the 30th day of April, 2014, the foregoing application by AT&T for an Order to Amend an Approved Shared Use of an Existing Tower was sent, via UPS, to the following:

Carl M. Ferencek and Marilyn T. Ferencek
111 Upper Fish Rock Rd.
Southbury, CT 06488

and

First Selectman, Ed Edelson
501 Main Street
South Southbury, CT 06488
203-262-0647

By: _____
Steven J. Quinn



PROPERTY PLAN

SCALE: 1" = 250'-0"

0 62'-6" 125' 250' 300'

1 / L-1

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying

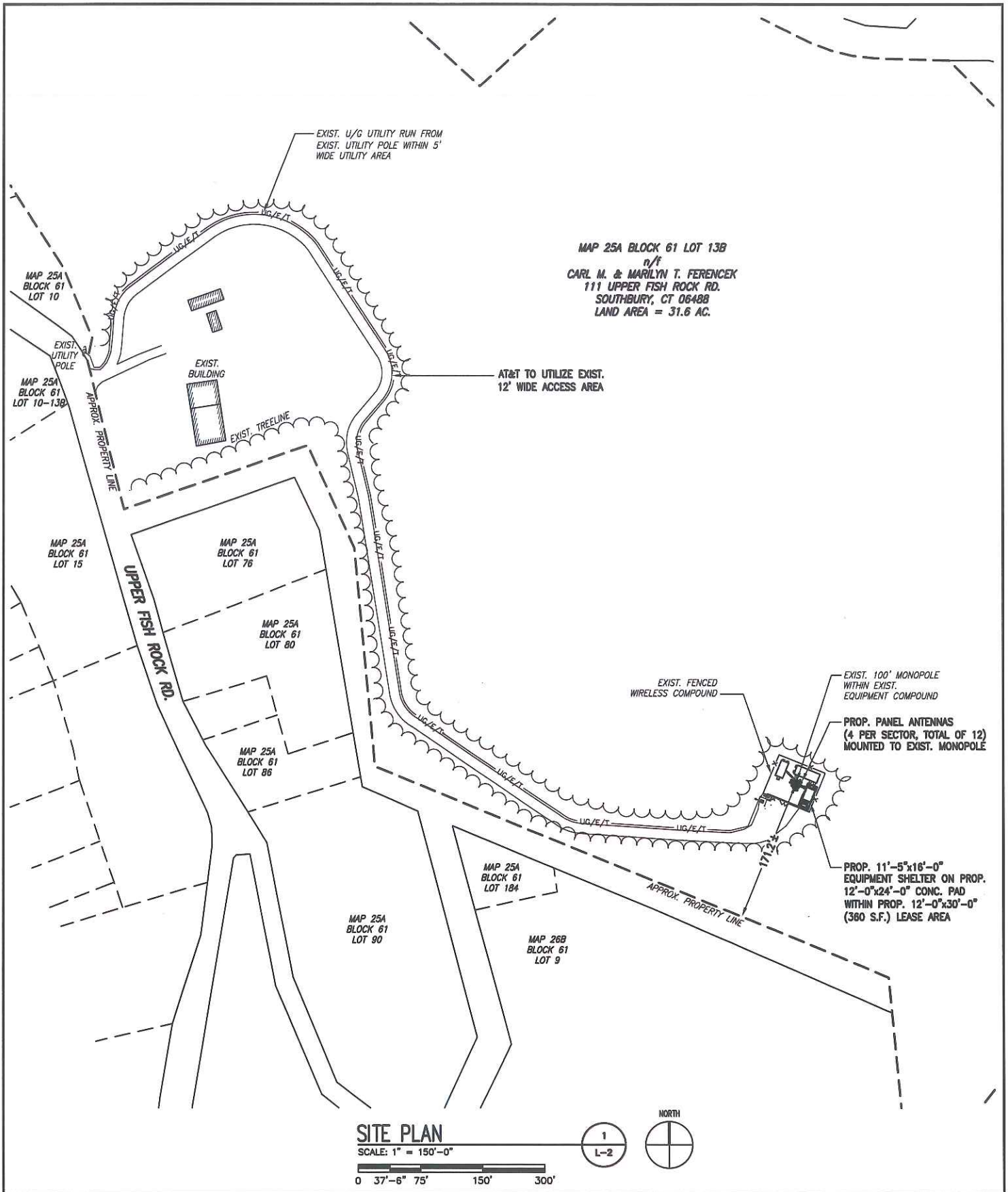
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
TEL: 508.481.7400
FAX: 508.481.7406

at&t
500 COCHITUATE ROAD, SUITE 13
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE:	LEASE EXHIBIT
SITE NO:	CT2426S-A
SITE NAME:	SOUTHBURY COOPER HILL ROAD
ADDRESS:	111 UPPER FISH ROCK ROAD SOUTHBURY, CT 06488

DATE:	12/16/2013
DRAWN BY:	NWC
REVISION:	1
CEA #:	1325.007
SHEET:	1 OF 4



SITE PLAN

SCALE: 1" = 150'-0"

1 / L-2

0 37'-6" 75' 150' 300'

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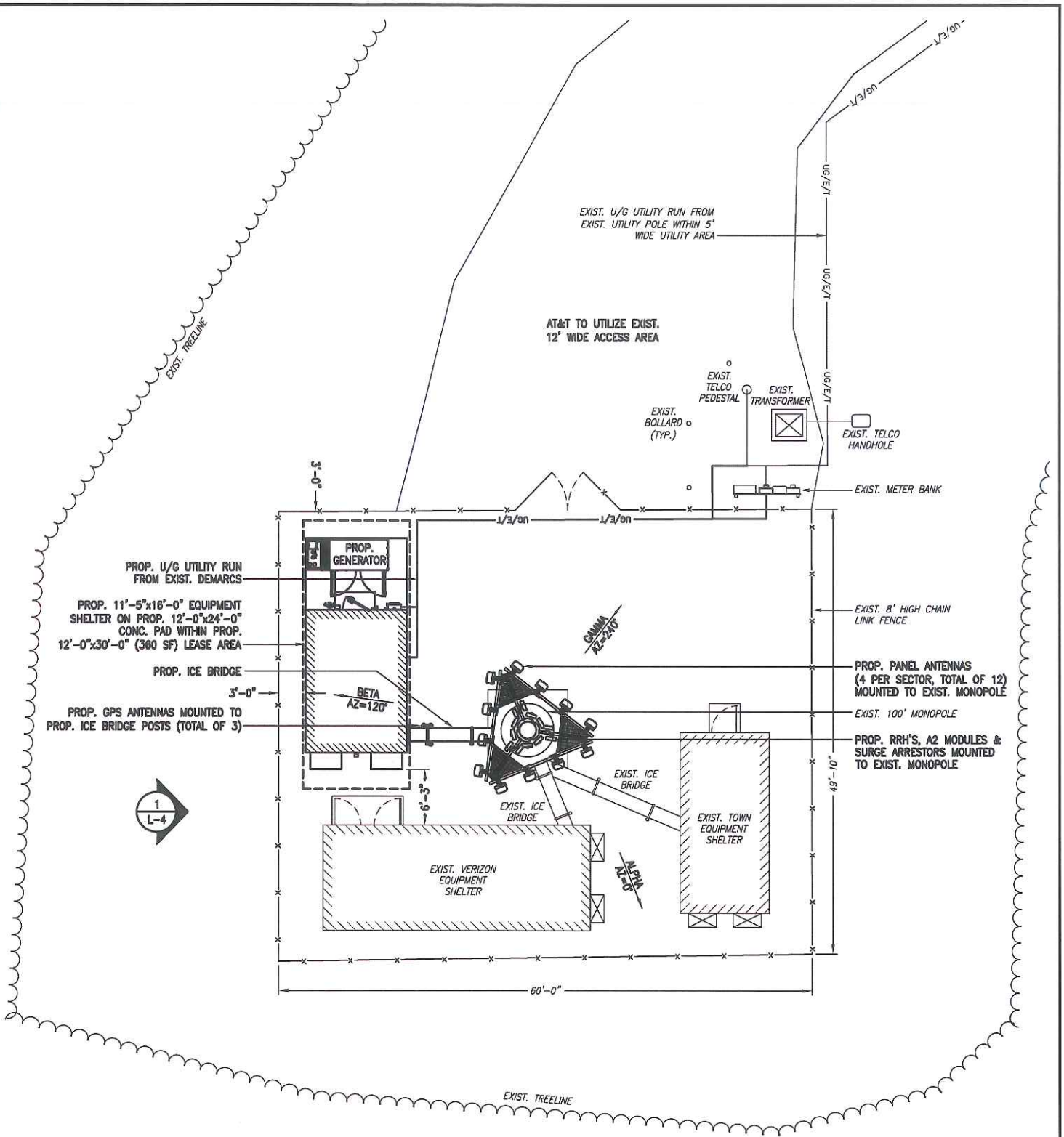
DRAWN BY:	NWC
REVISION:	1
CEA #:	1325.007
SHEET:	2 OF 4



COMPOUND PLAN

SCALE: 1" = 15'-0"

0 7.5' 15' 30' 45'

1
L-3

NORTH

CHAPPELL ENGINEERING ASSOCIATES, LLC
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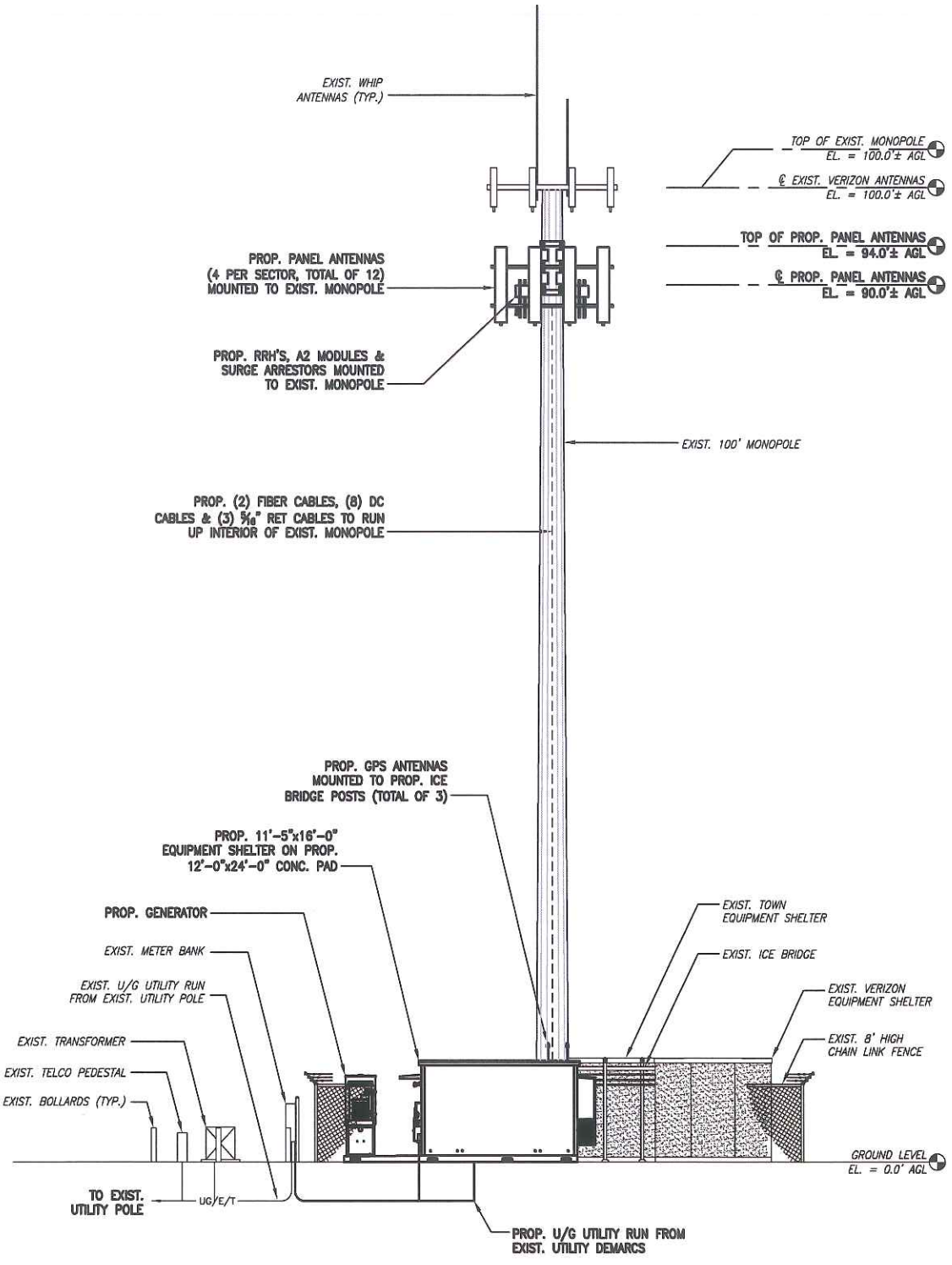
REVISION:	1
CEA #:	1325.007
SHEET:	3 OF 4



ELEVATION

SCALE: 1" = 16'-0"

1 / L-4

0 4' 8' 16' 32'

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying

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TITLE:	LEASE EXHIBIT
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ADDRESS:	111 UPPER FISH ROCK ROAD SOUTHBURY, CT 06488

DATE:	12/16/2013
DRAWN BY:	NWC
REVISION:	1
CEA #:	1325.007
SHEET:	4 OF 4

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

100-ft Existing EEI Monopole

Proposed AT&T Mobility
Antenna Upgrade

AT&T Site Ref: CT2426s

Verizon Site Ref: Newtown NE

111 Upper Fish Rock Road
Southbury, CT

CENTEK Project No. 13338.000

~~Date: December 4, 2013~~
Rev 1: April 28, 2014

Prepared for:

AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T Mobility on the existing monopole (tower) owned and operated by Verizon Wireless located in Southbury, Connecticut.

The host tower is a 100-ft tall, three-section, eighteen sided, tapered monopole, originally designed and manufactured by Engineered Endeavors Incorporated (EEI); project no. 14859-E01 dated April 20, 2007. The tower geometry, structure member sizes and foundation system information were obtained from the original manufacturers design documents.

Antenna and appurtenance information were obtained from a visual verification conducted from grade by Centek personnel on November 11, 2013 and a AT&T RF data sheet.

The tower is made up of three (3) tapered vertical sections consisting of A572-65 pole sections. The vertical tower sections are slip joint connected The diameter of the pole (flat-flat) is 41.34-in at the top and 70.00-in at the base.

AT&T Mobility proposes the installation of twelve (12) panel antennas, twenty-one (21) remote radio heads, six (6) A2 units and four (4) surge arrestors mounted on a proposed platform. Refer to the Antenna and Appurtenance Summary below for a detailed description of the proposed antenna and appurtenance configuration.

Antenna and Appurtenance Summary

The existing tower was designed to support several communication antennas. The existing, proposed and future loads considered in this analysis consist of the following:

- TOWN (EXISTING):
  Antennas: One (1) 20-ft Omni-directional whip antenna mounted on the existing Verizon Wireless low profile platform with an elevation of 97-ft above grade level.
  Coax Cables: One (1) 1-1/4" ∅ coax cable running on the inside of the existing tower.

- VERIZON WIRELESS (RESERVED):
  Antennas: Six (6) Antel LPA-80063-6CF panel antennas, six (6) Antel BXA-70063-6CF panel antennas, six (6) LPA-171063-12CF panel antennas, six (6) RFS FD9R6004/2C-3L diplexers, six (6) RRH's and one (1) main distribution box mounted on a low profile platform with a RAD center elevation of 100-ft above grade level.
  Coax Cables: Eighteen (18) 1-5/8" ∅ coax cables and two (2) 1-5/8" ∅ fiber cables running on the inside of the existing tower.

- **AT&T (PROPOSED):**
  Antennas: Twelve (12) CCI HPA-65R-BUU-H8 panel antennas, nine (9) Ericsson RRUS-11 remote radio units, six (6) Ericsson RRUS-12 remote radio units, three (3) Ericsson RRUS-E2 remote radio units, three (3) Ericsson RRUS-32 remote radio units, six (6) Ericsson A2 units, and four (4) Raycap DC6-48-60-18-8F surge arrestors mounted on a Commscope platform p/n MTC3607R with a RAD center elevation of 90-ft above existing grade.
  Coax Cables: Two (2) fiber cable, eight (8) dc control cables and three (3) RET cables running on the inside of the existing tower.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables to be installed as indicated in this report.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower shaft, and the model assumes that the shaft members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (fastest mile) with no ice and a 75% reduction of wind force with ½ inch accumulative ice to determine stresses in members as per guidelines of TIA/EIA-222-F-96 entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Allowable Stress Design (ASD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix K of the CSBC[1] and the wind speed data available in the TIA/EIA-222-F-96 Standard. The higher of the two wind speeds is utilized in preparation on the tower analysis.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA/EIA-222-F, gravity loads of the tower structure and its components, and the application of ½" radial ice on the tower structure and its components.

Basic Wind Speed:	New Haven; v = 85 mph (fastest mile)	*[Section 16 of TIA/EIA-222-F-96]*
	Southbury; v = 95 mph (3 second gust) equivalent to v = 77.5 mph (fastest mile)	*[Appendix K of the 2005 CT Building Code Supplement]*
	TIA/EIA wind speed controls.	
Load Cases:	Load Case 1; 85 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 2; 74 mph wind speed w/ ½" radial ice plus gravity load – used in calculation of tower stresses. The 74 mph wind speed velocity represents 75% of the wind pressure generated by the 85 mph wind speed.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 3; Seismic – not checked	*[Section 1614.5 of State Bldg. Code 2005] does not control in the design of this structure type*

[1] The 2005 Connecticut State Building Code as amended by the 2009 CT State Supplement. (CSBC)

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower. Allowable stresses were determined based on Table 5 of the TIA/EIA code with a 1/3 increase per Section 3.1.1.1 of the same code.

- Calculated stresses were found to be within allowable limits. In Load Case 1, per tnxTower "Section Capacity Table", this tower was found to be at **27.1%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Pole Shaft (L3)	1.00'-46.16'	27.1%	**PASS**

Foundation and Anchors

The existing foundation consists of a 9-ft square x 3.0-ft long reinforced concrete pier on a 32.0-ft square x 3.0-ft thick reinforced concrete pad. The sub-grade conditions used in the analysis of the existing foundation were obtained from the aforementioned original design documents prepared by EEI job no. 14859-E01 dated April 20, 2007. The base of the tower is connected to the foundation by means of (36) 2.25"∅, ASTM A615-75 anchor bolts embedded approximately 5-ft into the concrete foundation structure.

- The tower base reactions developed from the governing Load Case 1 were used in the verification of the foundation and its anchors:

Location	Vector	Proposed Reactions
Base	Shear	28 kips
	Compression	40 kips
	Moment	2150 kip-ft

- The foundation was found to be within allowable limits.

Foundation	Design Limit	IBC 2003/2005 CT State Building Code Section 3108.4.2 (FS)[1]	Proposed Loading (FS)[1]	Result
Reinforced Concrete Pad and Pier	OTM[2]	2.0	5.8	**PASS**

Note 1: FS denotes Factor of Safety.
Note 2: OTM denotes Overturning Moment.

- The anchor bolts and base plate were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Combined Axial and Bending	19.4%	**PASS**
Base Plate	Bending	11.5%	**PASS**

Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by AT&T Mobility. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:

Carlo F. Centore, PE
Principal ~ Structural Engineer

STATE OF CONNECTICUT
CARLO F. CENTORE
No. 18884
LICENSED
PROFESSIONAL ENGINEER

Prepared by:

Timothy J. Lynn, PE
Structural Engineer

December 10, 2013

To Whom It May Concern:

Re: Cellco Partnership d/b/a Verizon Wireless
Facility at 111 Upper Fish Rock Rd, Southbury, CT

Dear Sir/Madam:

Cellco Partnership d/b/a Verizon Wireless, the owner of the above referenced facility, do hereby authorizes Mr. Kevin Woodley or any other AT&T's authorized agent to file all necessary applications with the CT Siting Council, Town of Southbury or any other governmental entity for the proposed AT&T's co-location at the above-referenced location.

Sincerely,

Signature

Real Estate Representative
Its:

12190706-v1

Power Density Calculations

Applicant:	New Cingular Wireless PCS, LLC d/b/a AT&T
Site ID:	CT2426
Site Type:	Existing 100' Monopole Tower
Address:	111 Upper Fish Rock Road, CT 06488
Date:	April 30, 2014

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1. Existing Power Density [1]

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon cellular	9	268	100'	0.0867	869 Band	0.5793	14.97%
Verizon PCS	11	268	100'	0.1060	1970 Band	1.0000	10.60%
Verizon AWS	1	651	100'	0.0234	2145 Band	1.0000	2.34%
Verizon LTE	1	875	100'	0.0315	698 Band	0.4653	6.76%
						TOTAL	**34.67%**

2. Proposed AT&T Power Density [2]

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
AT&T UMTS	2	500	75'	0.0639	800 Band	0.5867	10.90%
AT&T UMTS	1	500	75'	0.0320	1900 Band	1.0000	3.20%
AT&T LTE	1	500	75'	0.0320	700 Band	0.4667	6.85%
AT&T LTE	1	500	75'	0.0320	1900 Band	1.0000	3.20%
AT&T LTE	1	500	75'	0.0320	2300 Band	1.0000	3.20%
						TOTAL	**27.30%**

3. Cumulative Power Density Calculation Results

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon cellular	9	268	100'	0.0867	869 Band	0.5793	14.97%
Verizon PCS	11	268	100'	0.1060	1970 Band	1.0000	10.60%
Verizon AWS	1	651	100'	0.0234	2145 Band	1.0000	2.34%
Verizon LTE	1	875	100'	0.0315	698 Band	0.4653	6.76%
AT&T UMTS	2	500	75'	0.0639	800 Band	0.5867	10.90%
AT&T UMTS	1	500	75'	0.0320	1900 Band	1.0000	3.20%

[1] This Power Density information was taken from the Connecticut Siting Council database dated October 1, 2013.
[2] This Power Density information is based on worse case assumptions from AT&T's radio frequency engineers.

AT&T LTE	1	500	75'	0.0320	700 Band	0.4667	6.85%
AT&T LTE	1	500	75'	0.0320	1900 Band	1.0000	3.20%
AT&T LTE	1	500	75'	0.0320	2300 Band	1.0000	3.20%
						TOTAL	**61.97%**

4. **Conclusion:**

The addition of AT&T's antennas on the existing tower will result in the cumulative maximum permissible exposure (MPE) level of 61.97%. The proposal complies with the National Council on Radiation Protection and Measurements standard for MPE adopted by the Federal Communications Commission ("FCC"). Moreover, the maximum level of radio-frequency energy emitted from AT&T's installation will be well below the FCC's mandated radio frequency exposure limits.