HPC Wireless Services
46 Mill Plain Rd.
Floor 2
Danbury, CT, 06811
P.: 203.797.1112

EM-CING-164-120516

HPC WIRELESS SERVICES

May 15, 2012

ORIGINAL

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: New Cingular Wireless PCS, LLC – exempt modification
440 Hayden Station Road, Windsor, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of New Cingular Wireless PCS, LLC ("AT&T"). AT&T is making modifications to certain existing sites in its Connecticut system in order to implement LTE technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Mayor of the Town of Windsor.

AT&T plans to modify the existing wireless communications facility owned by Crown Castle and located at 440 Hayden Station Road in the Town of Windsor (coordinates 41°-53'-52.15" N, 72°-38'-38.69" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to AT&T's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. AT&T will replace the existing single-antenna mounts with new T-arms and add three (3) LTE panel antennas at a center line of approximately 92'; existing GSM/UMTS antennas will be relocated to the new mounts, for a total of six (6) antennas. Six (6)

RRHs (remote radio heads) and a surge arrestor will be mounted on pipes behind the antennas. AT&T will also place a DC power and fiber run from the equipment to the antennas inside the pole along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 96' structure.

2. The proposed changes will not extend the site boundaries. AT&T will install related equipment within its existing shelter and will mount a GPS antenna to the shelter. These changes will be within the existing compound and will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by C Squared Systems, LLC, AT&T's operations at the site will result in a power density of approximately 4.44%; the combined site operations will result in a total power density of approximately 32.66%.

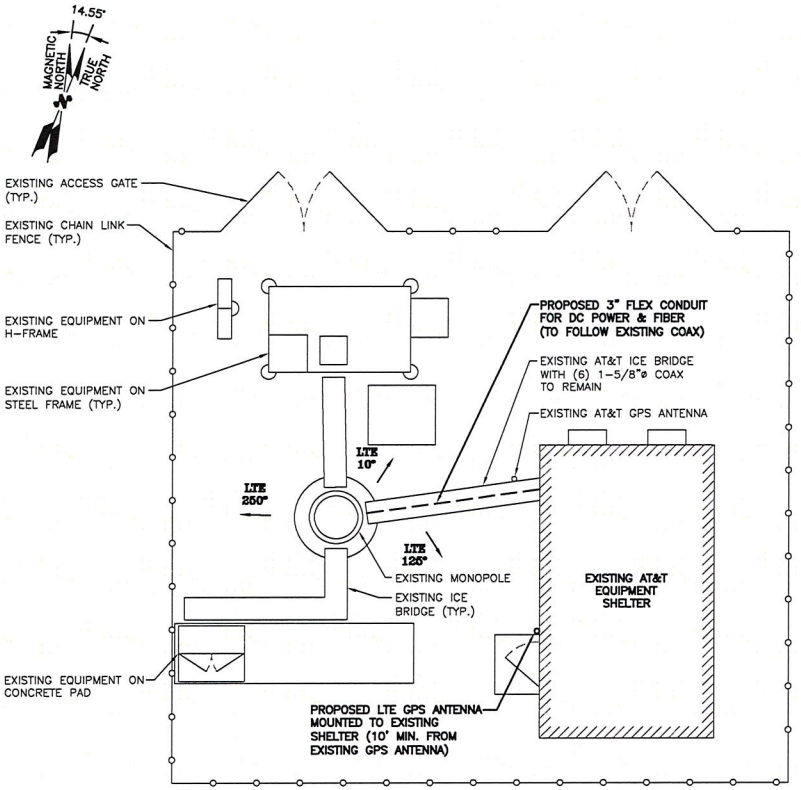
Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

Respectfully yours,

Jennifer Young Gaudet

Attachments

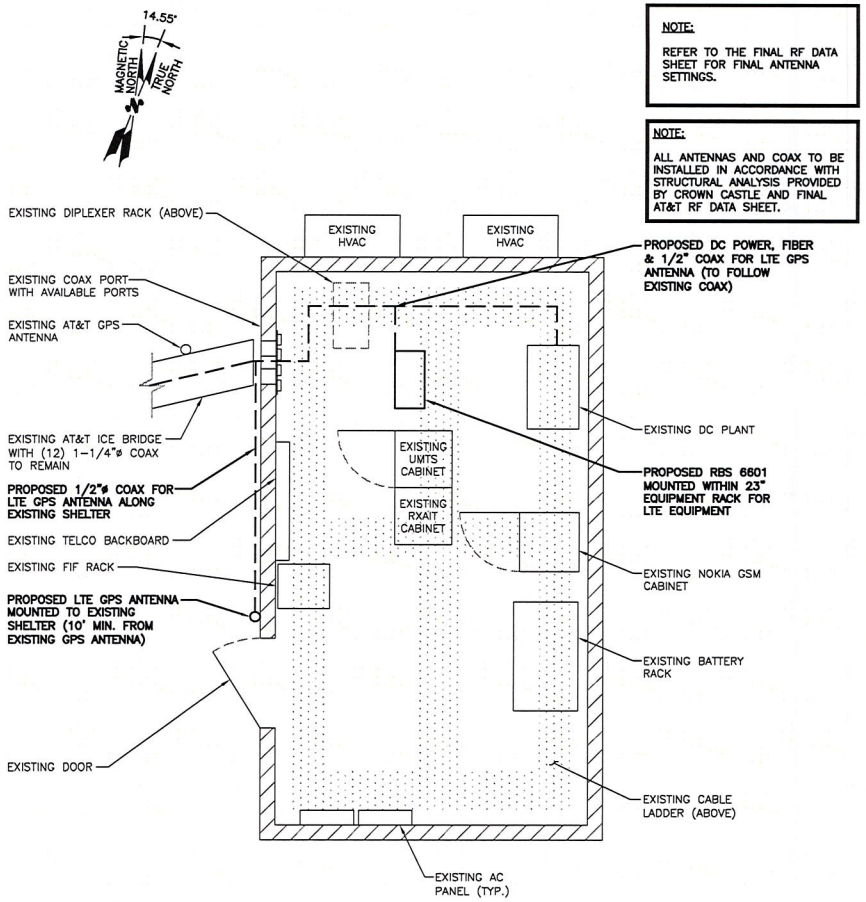
cc: Honorable Donald S. Trinks, Mayor, Town of Windsor
Peter Souza, Town Manager, Town of Windsor
CB Baggs LLP (underlying property owner)



COMPOUND PLAN

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

0 2'-0" 4'-0" 8'-0" 12'-0"



NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

EQUIPMENT PLAN

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT5140
SITE NAME: BREAKNECK
CROWN CASTLE ID: 876326
440 HAYDEN STATION ROAD
WINDSOR, CT 06095
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/24/12	ISSUED FOR CONSTRUCTION	DB	DC	DPH
0	04/05/12	ISSUED FOR REVIEW	DB	DC	DPH

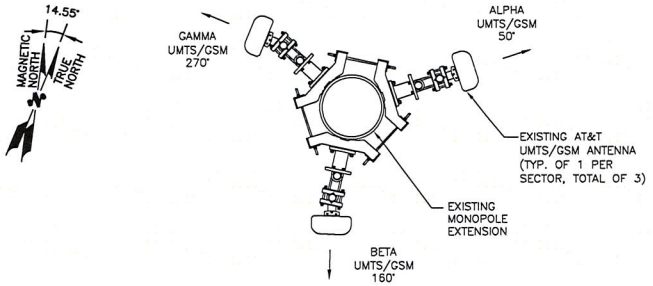
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: DB

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5140.01	A-1	1



EXISTING UMTS/GSM ANTENNA PLAN

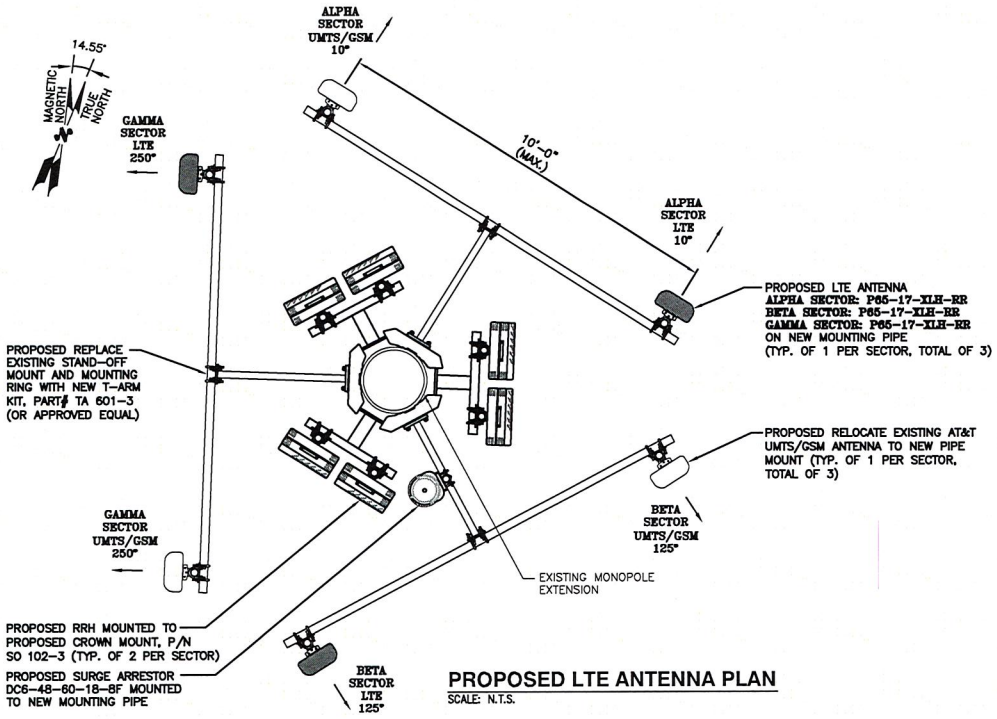
SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

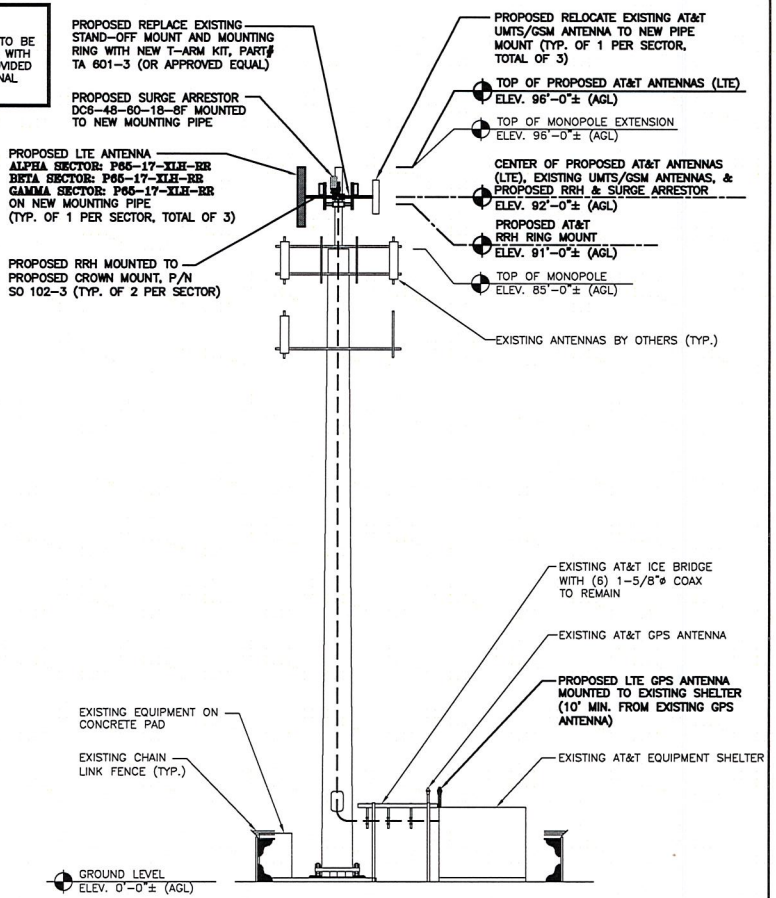
NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.



PROPOSED LTE ANTENNA PLAN

SCALE: N.T.S.



SOUTH ELEVATION

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
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SITE NAME: BREAKNECK
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500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: DB

STATE OF CONNECTION
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUT AND ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5140.01	A-2	1

Date: **April 26, 2012**

Veronica Harris
Crown Castle USA Inc.
1200 McArthur Blvd
Mahwah, NJ 07430

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
(919) 755-1012
info@fdh-inc.com

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5140
	Carrier Site Name:	AWE-Windsor Breakneck
Crown Castle Designation:	**Crown Castle BU Number:**	876326
	Crown Castle Site Name:	HAYDEN STATION
	Crown Castle JDE Job Number:	183459
	Crown Castle Work Order Number:	483599
	Crown Castle Application Number:	145013 Rev. 0
Engineering Firm Designation:	**FDH Engineering, Inc. Project Number:**	12-04546E S1
Site Data:	**440 Hayden Station Road, WINDSOR, Hartford County, CT** **Latitude *41° 53' 52.2"*, Longitude *-72° 38' 38.7"*** **96 Foot - Monopole Tower**	

Dear Veronica Harris,

FDH Engineering, Inc. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 459234, in accordance with application 145013, revision 0.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 Connecticut Building Code based upon a wind speed of 80 mph fastest mile.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *FDH Engineering, Inc.* appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Stephanie Neal, EI
Project Engineer

Reviewed by:

Christopher M. Murphy

Christopher M. Murphy
President
CT PE License No. 25842

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 96 ft Monopole tower designed by ROHN in January of 1997.
The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-E. This analysis assumes an 11-foot tower extension has been added to the original 85-ft tower as proposed by URS Greiner Woodward-Clyde, Inc. project F3000001824.14 dated November 12, 1999. A top tower mapping will be required to qualify the results in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
92.0	92.0	6	ericsson	RRUS-11	1	3/8	1
		3	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			
		1	crown mounts	T-Arm Mount [TA 601-3]	2	3/4	
91	91	1	crown mounts	Side Arm Mount [SO102-3]			

Notes:
1) Proposed Equipment

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
92.0	92.0	3	powerwave technologies	7770.00	6	1 5/8	1
		6	powerwave technologies	LGP21401			
		1	crown mounts	Pipe Mount [601-3]	---	---	3
		12	att mla	ATT GSL MLA ANTENNA w/ Mount Pipe	12	1 5/8	2
		6	lgp telecom	TMA-DDD 850/1900			
83.0	86.0	9	sprint mla	SPRINT MLA_ANTENNA w/ Mount Pipe	9	1 5/8	2
		3	dragonwave	A-ANT-11G-4-C	3	1/2	1
		3	dragonwave	HORIZON DUO			
	83.0	1	crown mounts	Platform Mount [LP 404-1]			
		6	dapa	58000 w/ Mount Pipe	6	5/16	
	82.0	3	kathrein	840 10045	6	1 5/8	
		3	samsung telecommunications	WIMAX DAP HEAD			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
75.0	75.0	1	crown mounts	Platform Mount [LP 305-1]	18	7/8	1
		3	ems wireless	DR65-18-00DPL2Q w/ Mount Pipe			

Notes:
1) Existing Equipment
2) MLA Equipment, not considered in this analysis
3) Equipment to be removed, not considered in this analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
85	85	12	swedcom	ALP9212	12	1 5/8
75	75	12	swedcom	ALP9212	12	1 5/8
60	60	12	swedcom	ALP9212	12	1 5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clough, Harbor, & Associates LLP (CHA Project No. 5835.07.04) dated August 27, 1996	1530918	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Rohn, Inc. (Eng. File No. 34738SW) dated December 23, 1996	1640630	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Rohn, Inc. (Eng. File No. 34738SW) dated January 10, 1997	1639483	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	URS Greiner Woodward-Clyde, Inc. (Site CT-140) dated November 12, 1999	1771083	CCISITES

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

This analysis may be affected if any assumptions are not valid or have been made in error. FDH Engineering, Inc. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	96 - 85	Pole	P12x.5	1	-2.70	538.65	17.4	Pass
L2	85 - 65	Pole	P42x3/8	2	-10.31	1484.55	16.8	Pass
L3	65 - 32.5	Pole	P48x3/8	3	-17.30	1643.28	38.1	Pass
L4	32.5 - 0	Pole	P48x1/2	4	-26.40	2356.76	47.7	Pass
							Summary	
						Pole (L4)	47.7	Pass
						RATING =	**47.7**	**Pass**

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	65	8.4	Pass
1	Flange Plate	65	OK	Pass
1	Flange Bolts	32.5	25.3	Pass
1	Flange Plate	32.5	OK	Pass
1	Anchor Rods	0	48.2	Pass
1	Base Plate	0	OK	Pass
1	Base Foundation	0	33.1	Pass
1	Base Foundation Soil Interaction	0	14.3	Pass

Structure Rating (max from all components) =	**48.2%**

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Base plate design methodology of the manufacturer has been reviewed and found to be an acceptable means of designing to resist the full capacity of the anchor bolts.

4.1) Recommendations

1. Coax must be installed as shown in Appendix B.
2. This analysis assumes an 11-foot tower extension has been added to the original 85-ft tower as proposed by URS Greiner Woodward-Clyde, Inc. project F3000001824.14 dated November 12, 1999. A top tower mapping will be required to qualify the results in this analysis.

C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions

at&t

CT5140 – AWE-Windsor Breakneck

440 Hayden Station Road, Windsor, CT

May 9, 2012

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List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located at 440 Hayden Station Road in Windsor, CT. The coordinates of the tower are 41° 53' 52.2" N, 72° 38' 38.7" W.

AT&T is proposing the following modifications:

1) Install three 700 MHz LTE antennas (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \text{x Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Cingular GSM	*92*	*1900*	*2*	*742*	*0.0630*	*1.0000*	*6.30%*
Cingular UMTS	*92*	*880*	*1*	*500*	*0.0212*	*0.5867*	*3.62%*
T-Mobile GSM	73	1945	8	151	0.0815	1.0000	8.15%
T-Mobile UMTS	73	2100	2	834.0	0.1125	1.0000	11.25%
Clearwire	82	2496	2	153	0.0164	1.0000	1.64%
Clearwire	86	18 GHz	1	211	0.0103	1.0000	1.03%
Sprint	85	1962.5	3	412	0.0615	1.0000	6.15%
AT&T UMTS	92	880	2	565	0.0048	0.5867	0.82%
AT&T UMTS	92	1900	2	1077	0.0092	1.0000	0.92%
AT&T LTE	92	734	1	1615	0.0069	0.4893	1.40%
AT&T GSM	92	880	1	283	0.0012	0.5867	0.20%
AT&T GSM	92	1900	4	646	0.0110	1.0000	1.10%
						Total	**32.66%**

Table 1: Carrier Information[1] [2] [3]

[1] The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 3/29/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the FDH Engineering, Inc. Structural Analysis Report dated 4/26/2012.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **32.66% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Daniel L. Goulet
C Squared Systems, LLC

May 9, 2012
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[4]

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

(B) Limits for General Population/Uncontrolled Exposure[5]

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

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

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

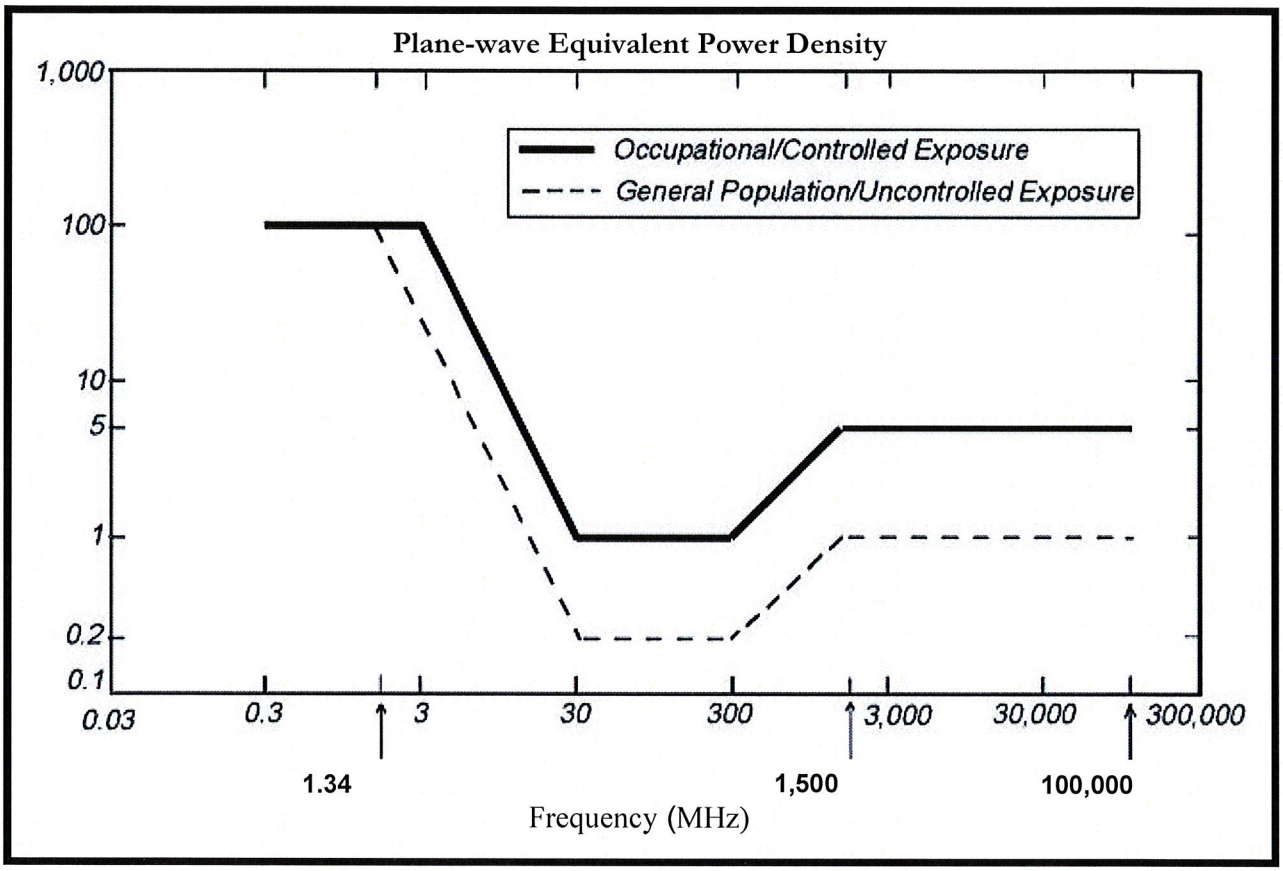
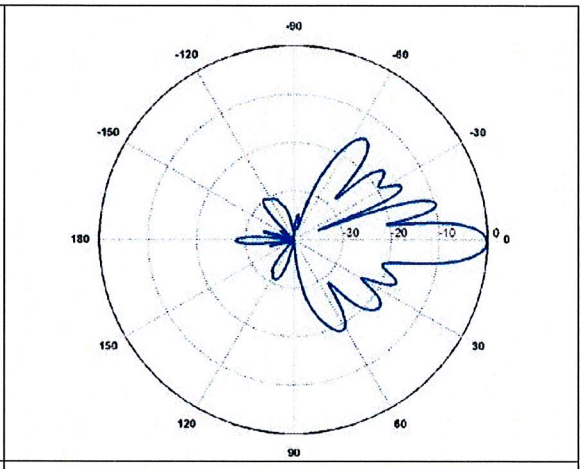


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

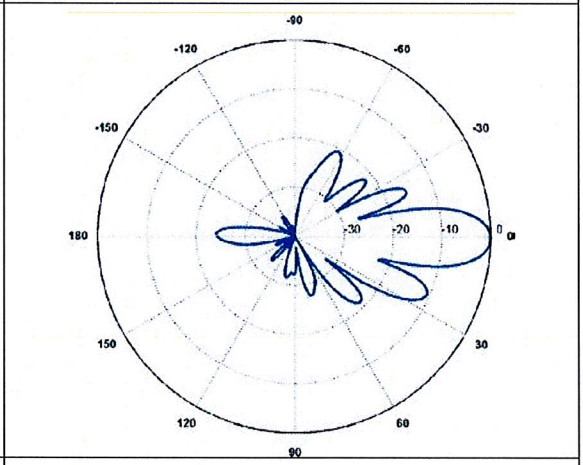
700 MHz

Manufacturer:	Powerwave
Model #:	P65-17-XLH-RR
Frequency Band:	698-806 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	8.4°
Horizontal Beamwidth:	70°
Polarization:	Dual Slant ± 45°
Size L x W x D:	96"x12"x6"



850 MHz

Manufacturer:	Kathrein
Model #:	80010121
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	14.5°
Horizontal Beamwidth:	86°
Polarization:	Dual Slant ± 45°
Size L x W x D:	54.5"x10.3"x5.9"



1900 MHz

Manufacturer:	Kathrein
Model #:	80010121
Frequency Band:	1850-1990 MHz
Gain:	14.4 dBd
Vertical Beamwidth:	6.6°
Horizontal Beamwidth:	85°
Polarization:	Dual Slant ± 45°
Size L x W x D:	54.5"x10.3"x5.9"