EM-CING-089-120518

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

HPC WIRELESS SERVICES

ORIGINAL

May 17, 2012

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
200 Stanley Street, New Britain, 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 City of New Britain.

AT&T plans to modify the existing wireless communications facility owned by Crown Castle and located at 200 Stanley Street,in the City of New Britain (coordinates 41°-39'-16.16" N, 72°-46'-11.14" 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 add three (3) LTE antennas to and relocate three (3) existing antennas on the existing platform at a center line of approximately 195'. AT&T will install six (6)

RRHs (remote radio heads) behind the LTE antennas and mount a surge arrestor at the base level of the platform. AT&T will also place a DC power and fiber run from the equipment to the antennas along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 192' structure.

2. The proposed changes will not extend the site boundaries. AT&T will install an additional equipment cabinet on an H-frame to be placed on the existing concrete pad. A GPS antenna will be mounted to the existing ice bridge. 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 0.98%; the combined site operations will result in a total power density of approximately 26.38%.

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.

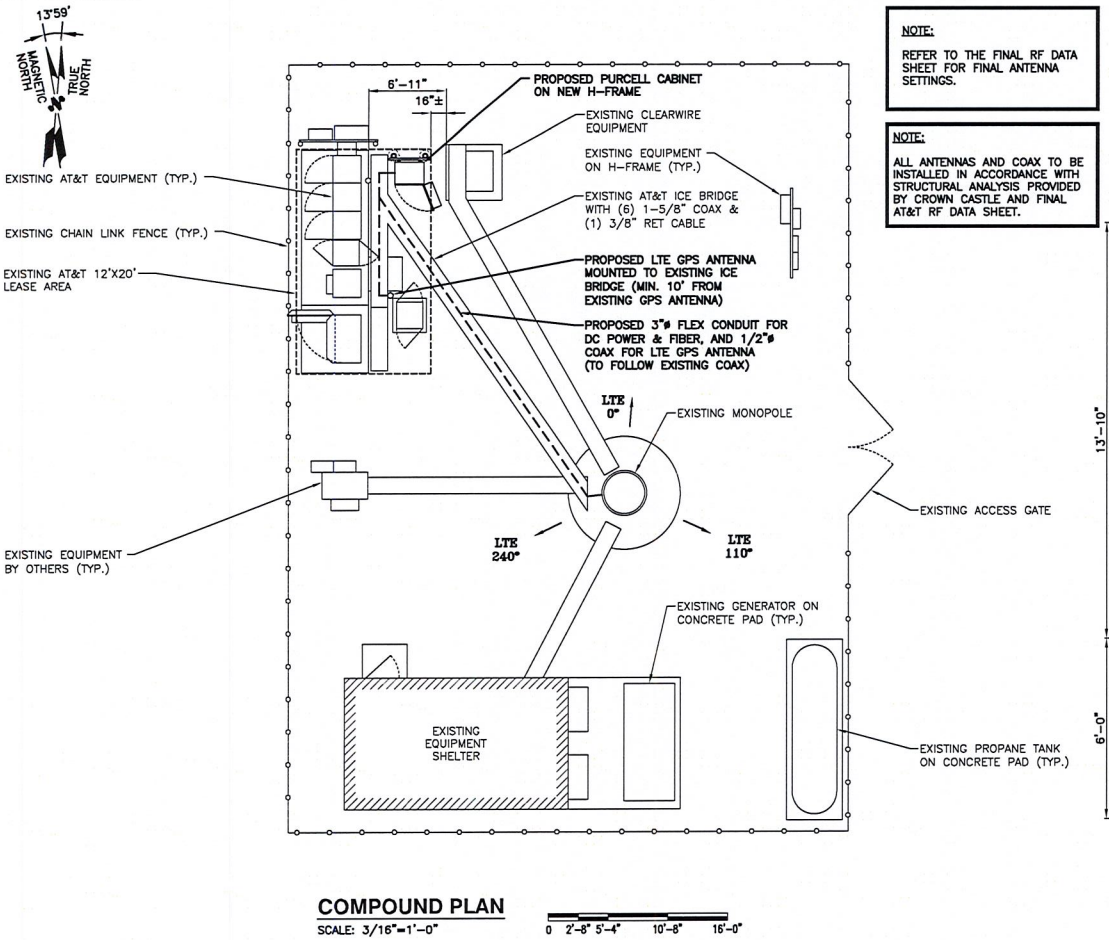
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

Attachments

cc: Honorable Timothy O'Brien, Mayor, City of New Britain
Downes Investments LLC (underlying property owner)



NOTE:

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

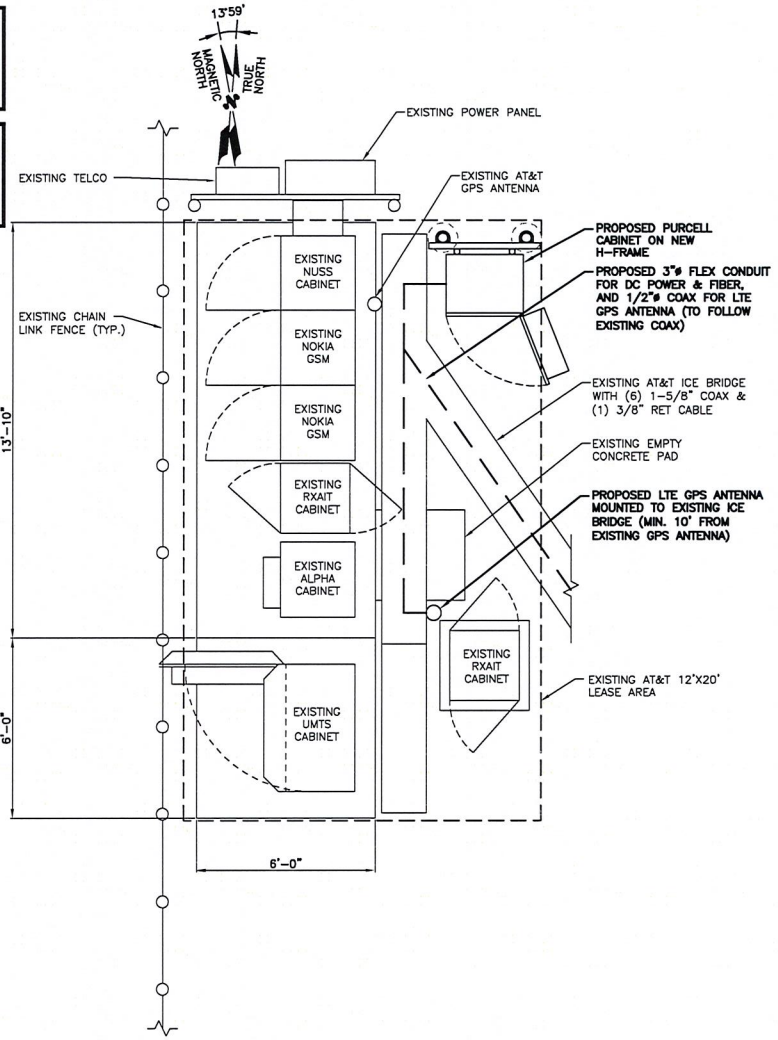
NOTE:

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

COMPOUND PLAN

SCALE: 3/16"=1'-0"

0 2'-8" 5'-4" 10'-8" 16'-0"



EQUIPMENT PLAN

SCALE: 1/2"=1'-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: CT5194
SITE NAME: NEW BRITAIN SE
CROWN CASTLE ID: 803843
200 STANLEY STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/24/12	ISSUED FOR CONSTRUCTION	DC	DPH	
0	04/03/12	ISSUED FOR REVIEW	SF	DC	DPH

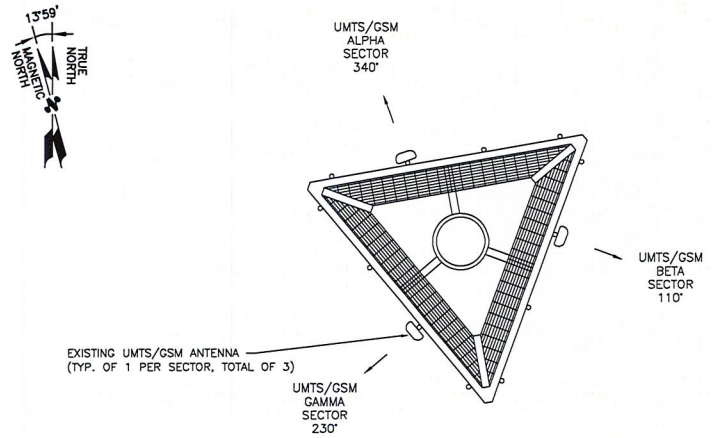
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: SF

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

AT&T

COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5194.01	A-1	1



EXISTING UMTS/GSM ANTENNA PLAN

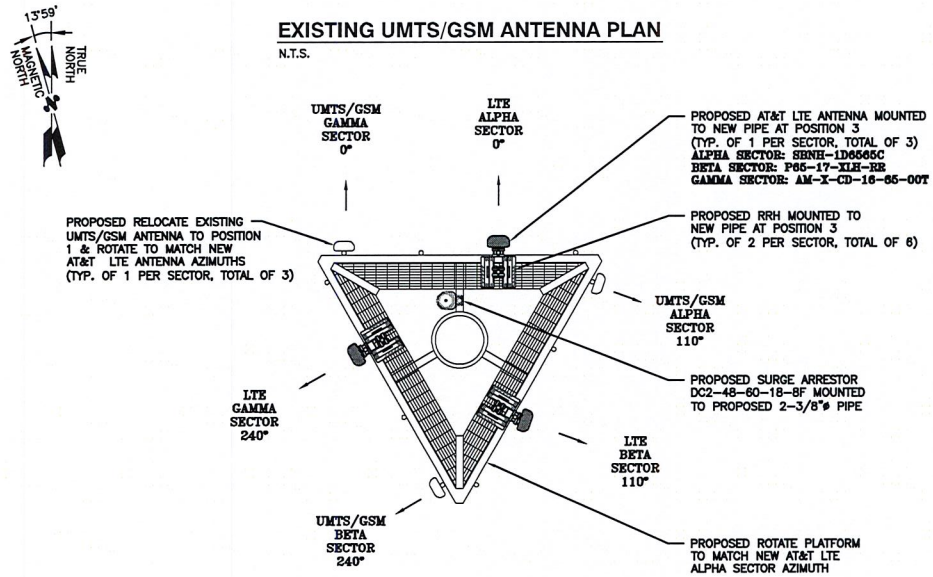
N.T.S.

NOTE:

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

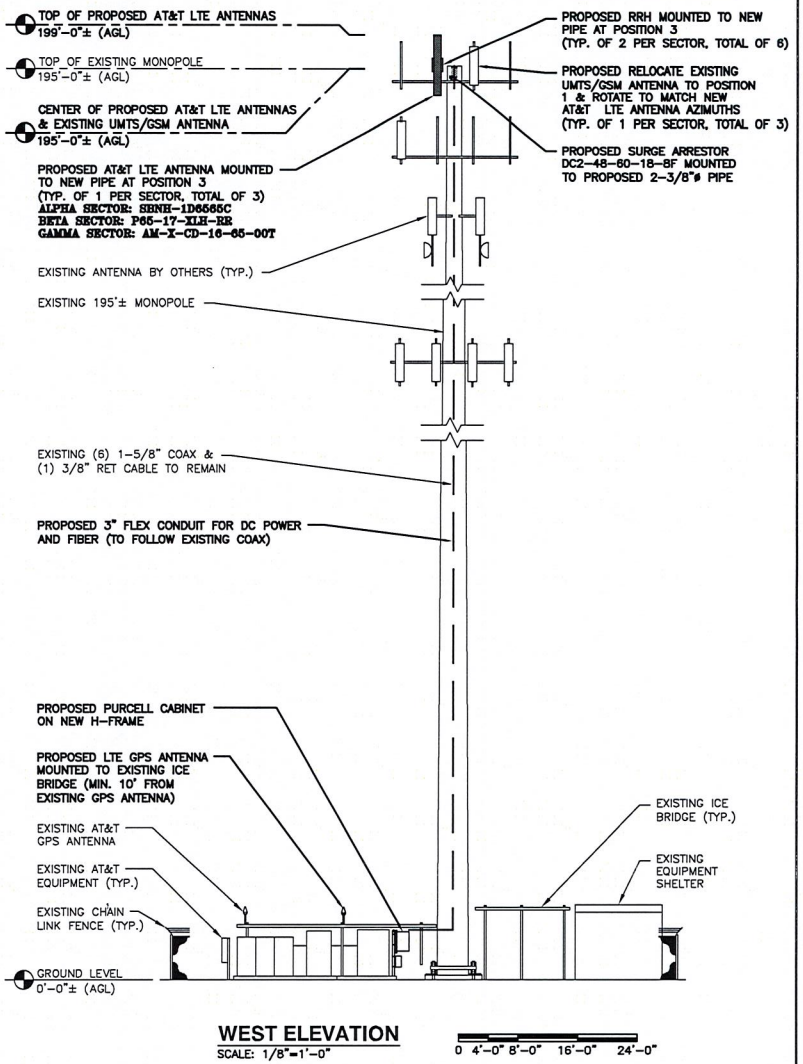
NOTE:

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

N.T.S.



WEST 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
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
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SITE NUMBER: CT5194
SITE NAME: NEW BRITAIN SE
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200 STANLEY STREET
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at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

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

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

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

AT&T

ANTENNA & ELEVATION PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5194.01	A-2	1

Date: **April 20, 2012**

Veronica Harris
Crown Castle
1200 McArthur Blvd
Mahwah, NJ 07430

Crown Castle
2000 Corporate Drive
Canonsburg, PA
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5194
	Carrier Site Name:	AWE-New Britain SE
Crown Castle Designation:	**Crown Castle BU Number:**	803843
	Crown Castle Site Name:	CT NEW BRITAIN 4 CAC 803843
	Crown Castle JDE Job Number:	183580
	Crown Castle Work Order Number:	484704
	Crown Castle Application Number:	145054 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	484704
Site Data:	**200 Stanley Street, New Britain, Hartford County, CT**	
	Latitude *41° 39' 16.4"*, Longitude *-72° 46' 9.59"*	
	192 Foot - Monopole Tower	

Dear Veronica Harris,

Crown Castle 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 484704, in accordance with application 145054, revision 1.

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 the 2005 Connecticut State 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 *Crown Castle* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Jose Arroyo-Monroy, E.I.T. / GS

Respectfully submitted by:

Aaron C. Poot, P.E.
Engineering Supervisor

STATE OF CONNECTICUT
AARON C. POOT
No. 25050
LICENSED PROFESSIONAL ENGINEER
4/20/12

tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 192 ft Monopole tower designed by Summit Manufacturing in April of 2001. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

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
193	195	1	andrew	SBNH-1D6565C w/ Mount Pipe	1 2	3/8 3/4	1
		6	ericsson	RRUS-11			
		1	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		1	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			

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
193	195	3	kathrein	800 10121 w/ Mount Pipe	6	1-5/8	1
		6	powerwave technologies	LGP21401			
	193	-	-	-	1	5/16	2
		1	tower mounts	Platform Mount [LP 712-1]	-	-	1
185	185	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8	1
		1	tower mounts	Platform Mount [LP 712-1]			
175	177	1	andrew	PX2F-52	3 3 3 1	1/2 1/4 5/8 5/16	1
		2	andrew	VHLP2-23			
		2	dragonwave	HORIZON COMPACT			
	176	3	argus technologies	LLPX310R w/ Mount Pipe			
		3	samsung telecommunications	WIMAX DAP HEAD			
	175	1	motorola	TIMING 2000			
		1	tower mounts	Side Arm Mount [SO 102-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
100	102	3	andrew	LNX-6512DS-T4M w/ Mount Pipe	12	1-5/8	1
		3	antel	BXA-185090/8CF w/ Mount Pipe			
		6	rfs celwave	APL868013-42T0 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
	100	1	tower mounts	T-Arm Mount [TA 701-3]			

Notes:
1) Existing Equipment
2) Equipment To Be Removed

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)
192	192	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
185	185	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
175	175	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
165	165	-	-	MICROWAVE W/ MOUNT (CaAa = 110 FT SQ)	-	-
155	155	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
145	145	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
135	135	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E.	2384583	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford	1118798	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford	925033	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. Crown Castle 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	192 - 151.25	Pole	TP39.245x26x0.3125	1	-8.55	1923.73	21.7	Pass
L2	151.25 - 111.25	Pole	TP51.621x36.9948x0.4375	2	-17.46	3542.45	23.1	Pass
L3	111.25 - 72.75	Pole	TP63.259x48.6333x0.5	3	-31.93	4963.31	25.0	Pass
L4	72.75 - 35.75	Pole	TP74.285x59.6589x0.5625	4	-49.53	6563.60	25.4	Pass
L5	35.75 - 0	Pole	TP84.78x70.1535x0.5625	5	-75.76	7816.75	27.9	Pass
							Summary	
						Pole (L5)	27.9	Pass
						Rating =	27.9	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	38.6	Pass
1	Base Plate	0	33.8	Pass
1	Base Foundation Soil Interaction	0	41.7	Pass
Structure Rating (max from all components) =				**41.7%**

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and foundation are sufficient to carry the existing, reserved and proposed loading. No modifications are required at this time.

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

Calculated Radio Frequency Emissions

at&t

CT5194 - New Britain SE

200 Stanley Street, New Britain, CT 06051

(a.k.a. 188 Stanley Street)

May 10, 2012

Table of Contents

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 200 Stanley Street in New Britain, CT. The coordinates of the tower are 41-39-16.40 N, 72-46-09.53 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	*195*	*1900*	*5*	*570*	*0.0269*	*1.0000*	*2.69%*
Cingular UMTS	*195*	*880*	*1*	*500*	*0.0047*	*0.5867*	*0.81%*
Clearwire	175	2496	2	153	0.0036	1.0000	0.36%
Clearwire	175	11000	1	211	0.0025	1.0000	0.25%
Pocket	185	2130	3	631	0.0199	1.0000	1.99%
Verizon	102	869	9	246	0.0765	0.5793	13.21%
Verizon	102	1970	3	436	0.0452	1.0000	4.52%
Verizon	102	757	1	740	0.0256	0.5047	5.07%
AT&T UMTS	195	880	2	565	0.0011	0.5867	0.18%
AT&T UMTS	195	1900	2	1077	0.0020	1.0000	0.20%
AT&T LTE	195	734	1	1615	0.0015	0.4893	0.31%
AT&T GSM	195	880	1	283	0.0003	0.5867	0.05%
AT&T GSM	195	1900	4	646	0.0024	1.0000	0.24%
						Total	**26.38%**

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 identically match the total value reflected 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 Crown Castle Structural Analysis Report dated 4/20/2012.

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 **26.38% 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 10, 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.

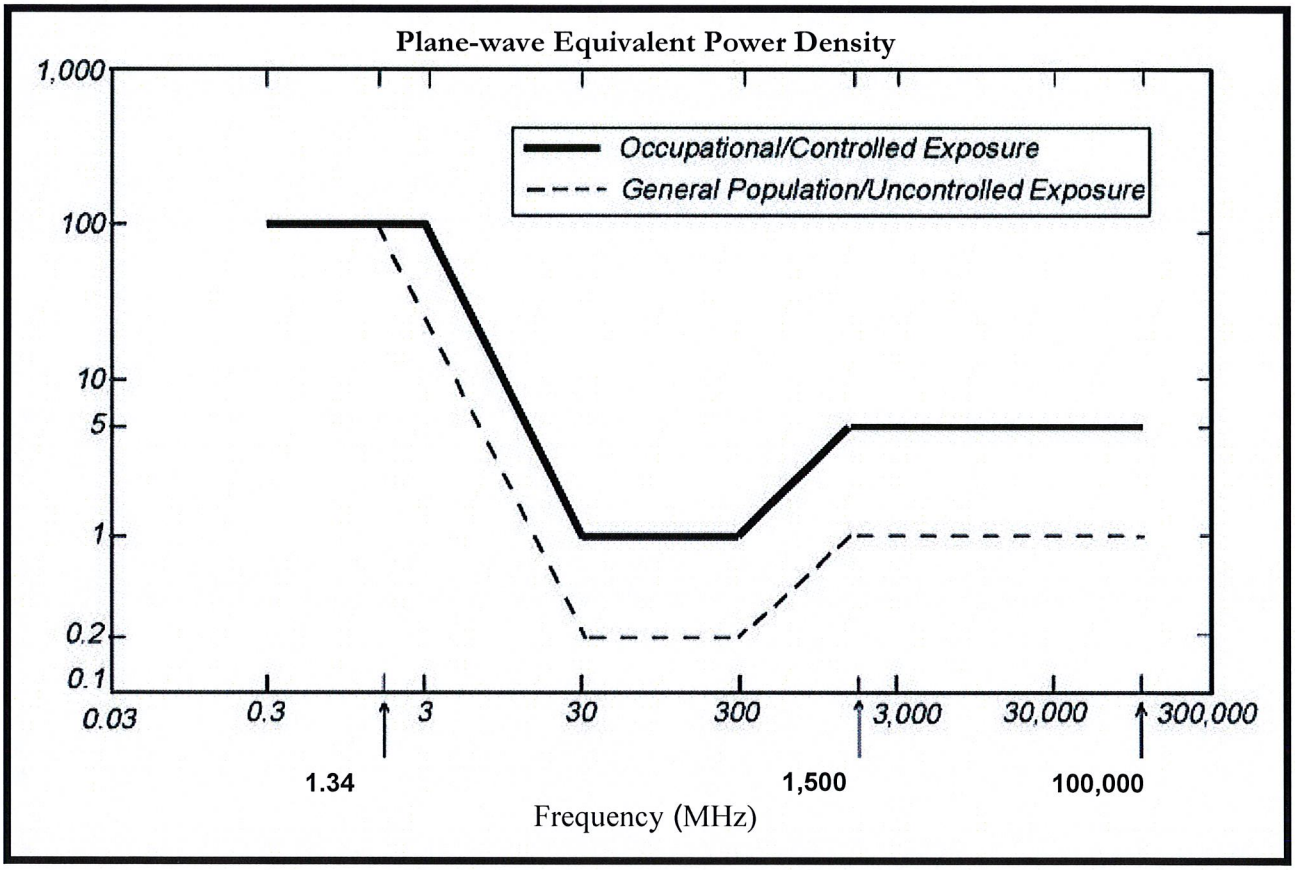
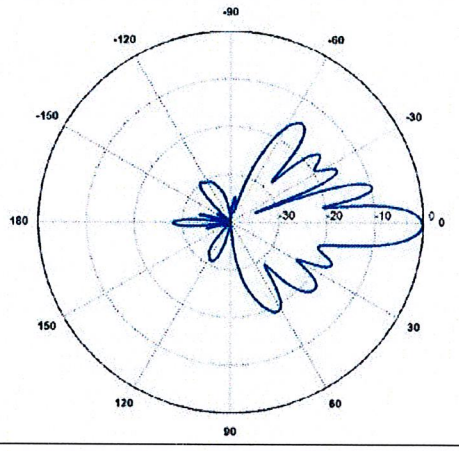


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

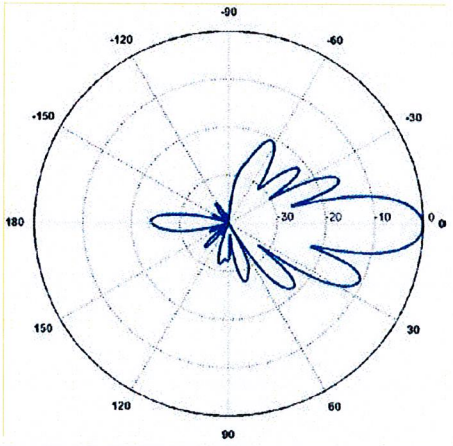
700 MHz

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 Linear ±45°
Size L x W x D:	96.0" x 12.0" x 6.0"



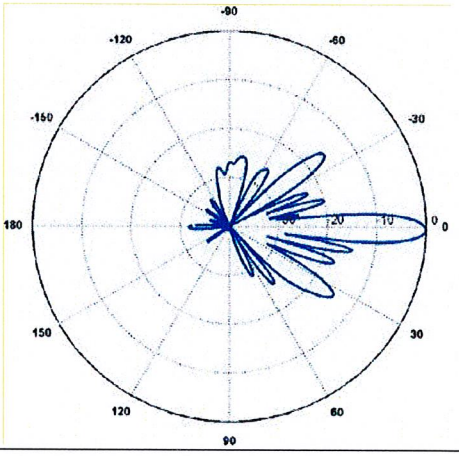
850 MHz

Manufacturer:	Kathrein-Scala
Model #:	800 10121
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	14.5°
Horizontal Beamwidth:	86°
Polarization:	±45°
Size L x W x D:	54.5" x 10.3" x 5.9"



1900 MHz

Manufacturer:	Kathrein-Scala
Model #:	800 10121
Frequency Band:	1850-1990 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	6.6°
Horizontal Beamwidth:	85°
Polarization:	±45°
Size L x W x D:	54.5" x 10.3" x 5.9"



EM-CING-089-120518

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

HPC WIRELESS SERVICES

May 17, 2012

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
200 Stanley Street, New Britain, 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 City of New Britain.

AT&T plans to modify the existing wireless communications facility owned by Crown Castle and located at 200 Stanley Street,in the City of New Britain (coordinates 41°-39'-16.16" N, 72°-46'-11.14" 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 add three (3) LTE antennas to and relocate three (3) existing antennas on the existing platform at a center line of approximately 195'. AT&T will install six (6)

RRHs (remote radio heads) behind the LTE antennas and mount a surge arrestor at the base level of the platform. AT&T will also place a DC power and fiber run from the equipment to the antennas along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 192' structure.

2. The proposed changes will not extend the site boundaries. AT&T will install an additional equipment cabinet on an H-frame to be placed on the existing concrete pad. A GPS antenna will be mounted to the existing ice bridge. 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 0.98%; the combined site operations will result in a total power density of approximately 26.38%.

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.

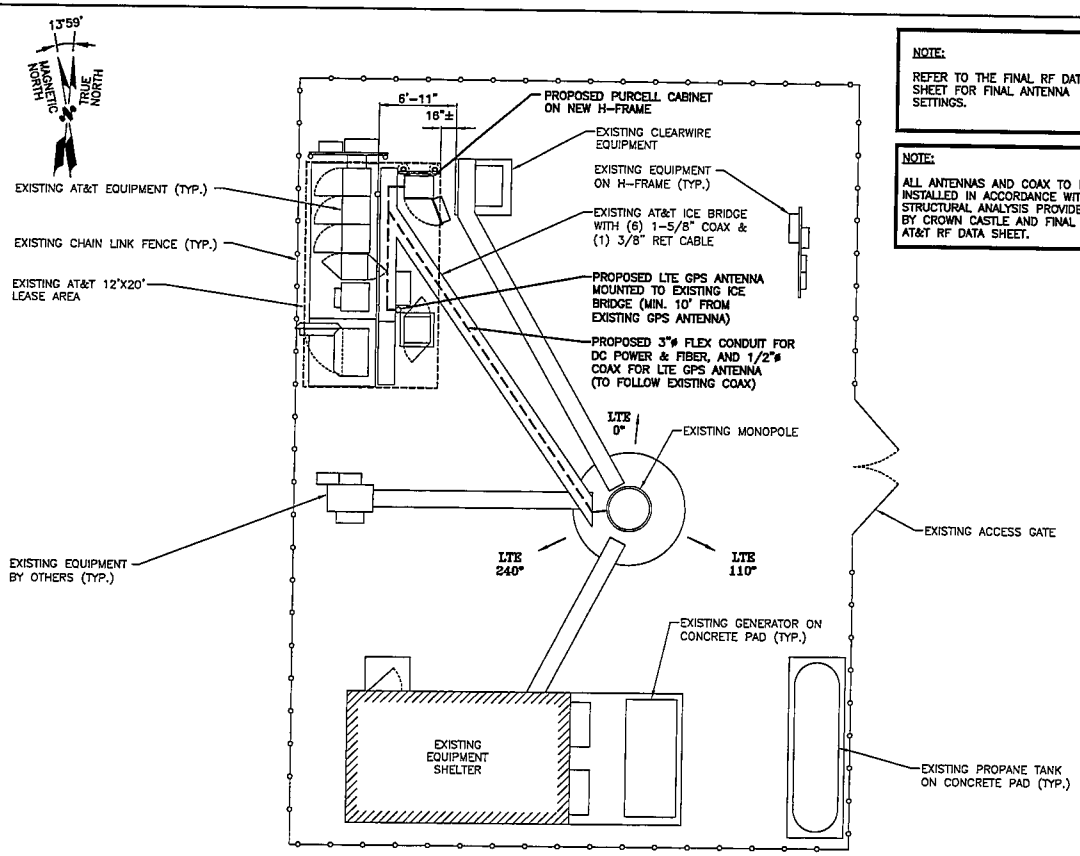
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

Attachments

cc: Honorable Timothy O'Brien, Mayor, City of New Britain
Downes Investments LLC (underlying property owner)



COMPOUND PLAN

SCALE: 3/16"=1'-0"

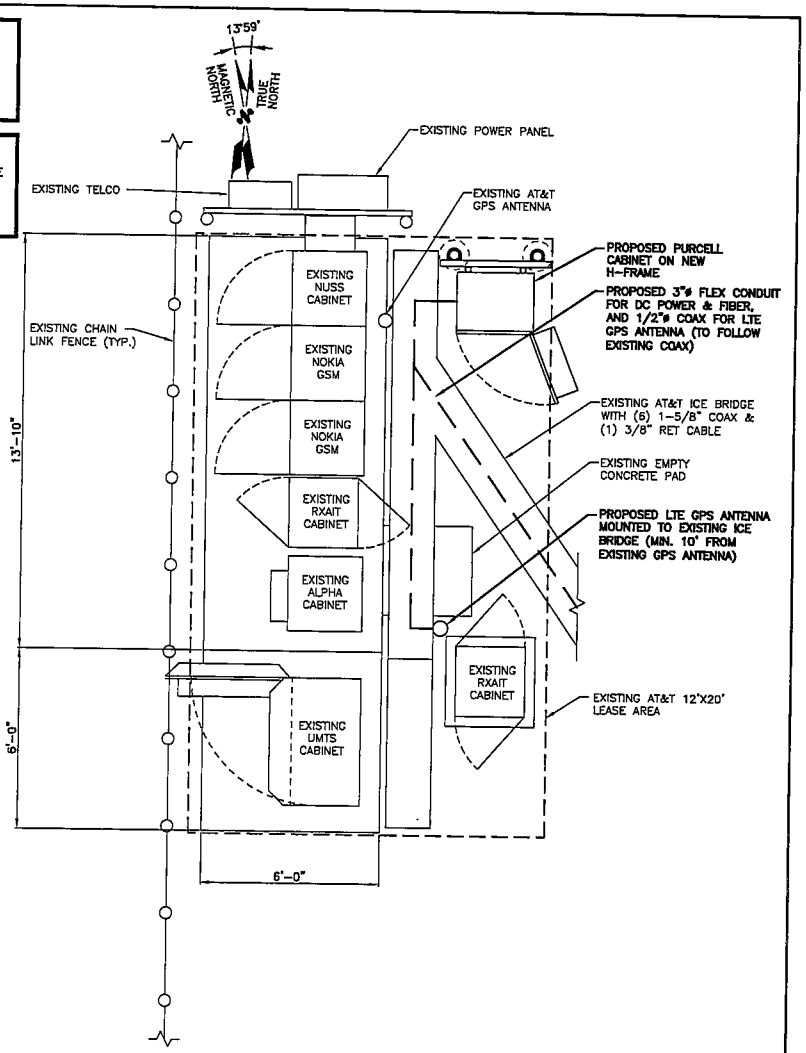
0 2'-8" 5'-4" 10'-8" 16'-0"

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' 3'-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) 336-5556

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

SITE NUMBER: CT5194
SITE NAME: NEW BRITAIN SE
CROWN CASTLE ID: 803843
200 STANLEY STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

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

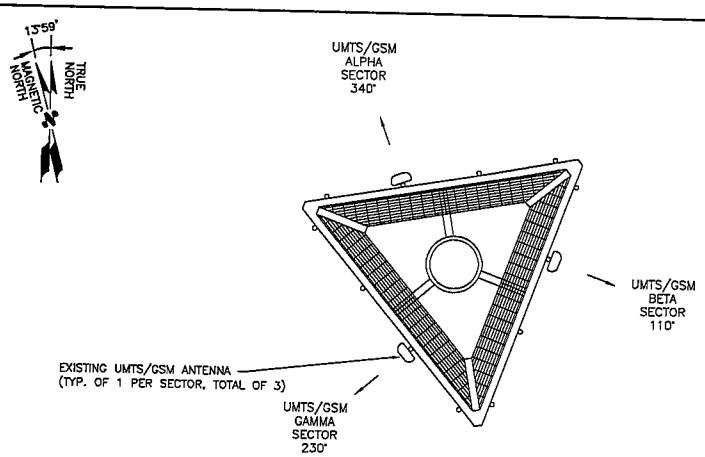
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: SF | CHK APP'D: DPH

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

AT&T

COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5194.01	A-1	1



EXISTING UMTS/GSM ANTENNA PLAN

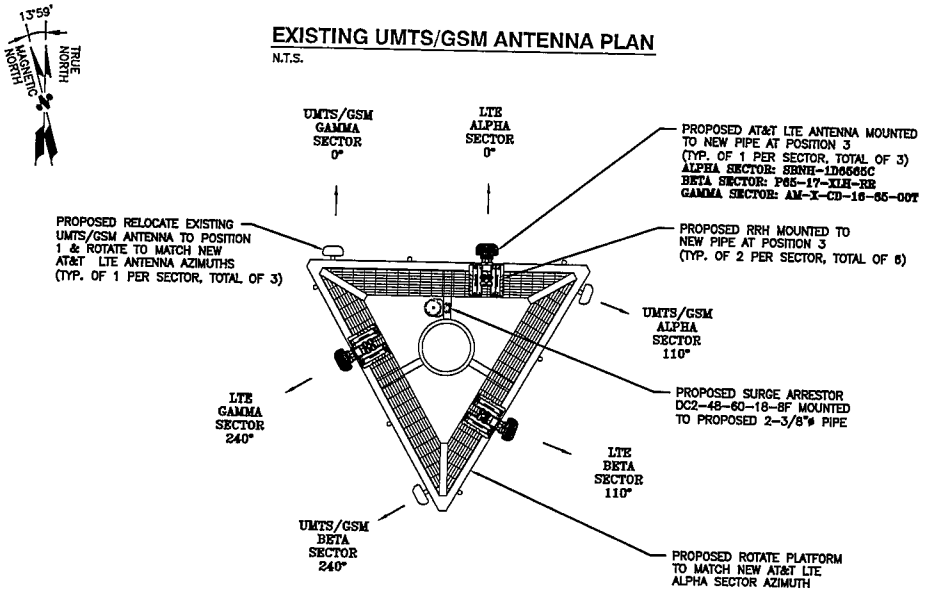
N.T.S.

NOTE:

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

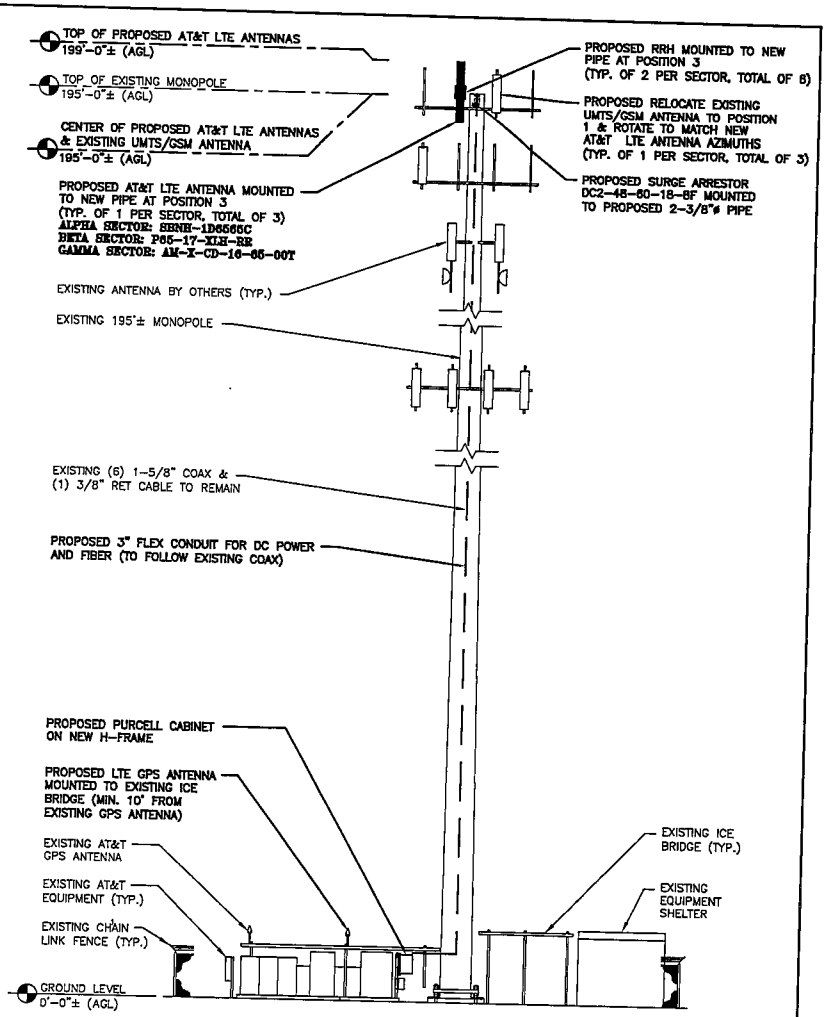
NOTE:

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

N.T.S.



WEST ELEVATION

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

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

Hudson Design Groupuc
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-0553
FAX: (978) 336-5586

NEXLINK
a UniTek GLOBAL SERVICES company
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SITE NUMBER: CT5194
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500 ENTERPRISE DRIVE
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	04/05/12	ISSUED FOR REVIEW	DC	DPH	

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

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

AT&T

ANTENNA & ELEVATION PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
5194.01	A-2	1

Date: **April 20, 2012**

Veronica Harris
Crown Castle
1200 McArthur Blvd
Mahwah, NJ 07430

Crown Castle
2000 Corporate Drive
Canonsburg, PA
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5194
	Carrier Site Name:	AWE-New Britain SE
Crown Castle Designation:	**Crown Castle BU Number:**	803843
	Crown Castle Site Name:	CT NEW BRITAIN 4 CAC 803843
	Crown Castle JDE Job Number:	183580
	Crown Castle Work Order Number:	484704
	Crown Castle Application Number:	145054 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	484704
Site Data:	**200 Stanley Street, New Britain, Hartford County, CT** **Latitude *41° 39' 16.4"*, Longitude *-72° 46' 9.59"*** **192 Foot - Monopole Tower**	

Dear Veronica Harris,

Crown Castle 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 484704, in accordance with application 145054, revision 1.

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 the 2005 Connecticut State 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 *Crown Castle* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Jose Arroyo-Monroy, E.I.T. / GS

Respectfully submitted by:

Aaron C. Poot, P.E.
Engineering Supervisor

STATE OF CONNECTICUT
AARON C. POOT
No. 25050
LICENSED
PROFESSIONAL ENGINEER

4/20/12

tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 192 ft Monopole tower designed by Summit Manufacturing in April of 2001. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

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
193	195	1	andrew	SBNH-1D6565C w/ Mount Pipe	1 2	3/8 3/4	1
		6	ericsson	RRUS-11			
		1	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		1	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			

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
193	195	3	kathrein	800 10121 w/ Mount Pipe	6	1-5/8	1
		6	powerwave technologies	LGP21401			
	193	-	-	-	1	5/16	2
		1	tower mounts	Platform Mount [LP 712-1]	-	-	1
185	185	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8	1
		1	tower mounts	Platform Mount [LP 712-1]			
175	177	1	andrew	PX2F-52	3 3 3 1	1/2 1/4 5/8 5/16	1
		2	andrew	VHLP2-23			
		2	dragonwave	HORIZON COMPACT			
	176	3	argus technologies	LLPX310R w/ Mount Pipe			
		3	samsung telecommunications	WIMAX DAP HEAD			
	175	1	motorola	TIMING 2000			
		1	tower mounts	Side Arm Mount [SO 102-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
100	102	3	andrew	LNX-6512DS-T4M w/ Mount Pipe	12	1-5/8	1
		3	antel	BXA-185090/8CF w/ Mount Pipe			
		6	rfs celwave	APL868013-42T0 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
	100	1	tower mounts	T-Arm Mount [TA 701-3]			

Notes:
1) Existing Equipment
2) Equipment To Be Removed

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)
192	192	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
185	185	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
175	175	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
165	165	-	-	MICROWAVE W/ MOUNT (CaAa = 110 FT SQ)	-	-
155	155	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
145	145	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-
135	135	-	-	PANEL ANTENNAS (CaAa = 75 FT SQ TOTAL)	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E.	2384583	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford	1118798	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford	925033	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. Crown Castle 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	192 - 151.25	Pole	TP39.245x26x0.3125	1	-8.55	1923.73	21.7	Pass
L2	151.25 - 111.25	Pole	TP51.621x36.9948x0.4375	2	-17.46	3542.45	23.1	Pass
L3	111.25 - 72.75	Pole	TP63.259x48.6333x0.5	3	-31.93	4963.31	25.0	Pass
L4	72.75 - 35.75	Pole	TP74.285x59.6589x0.5625	4	-49.53	6563.60	25.4	Pass
L5	35.75 - 0	Pole	TP84.78x70.1535x0.5625	5	-75.76	7816.75	27.9	Pass
							Summary	
						Pole (L5)	27.9	Pass
						Rating =	27.9	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	38.6	Pass
1	Base Plate	0	33.8	Pass
1	Base Foundation Soil Interaction	0	41.7	Pass

Structure Rating (max from all components) =	41.7%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and foundation are sufficient to carry the existing, reserved and proposed loading. No modifications are required at this time.

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

Calculated Radio Frequency Emissions

at&t

CT5194 - New Britain SE

200 Stanley Street, New Britain, CT 06051

(a.k.a. 188 Stanley Street)

May 10, 2012

Table of Contents

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 200 Stanley Street in New Britain, CT. The coordinates of the tower are 41-39-16.40 N, 72-46-09.53 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	*195*	*1900*	*5*	*570*	*0.0269*	*1.0000*	*2.69%*
Cingular UMTS	*195*	*880*	*1*	*500*	*0.0047*	*0.5867*	*0.81%*
Clearwire	175	2496	2	153	0.0036	1.0000	0.36%
Clearwire	175	11000	1	211	0.0025	1.0000	0.25%
Pocket	185	2130	3	631	0.0199	1.0000	1.99%
Verizon	102	869	9	246	0.0765	0.5793	13.21%
Verizon	102	1970	3	436	0.0452	1.0000	4.52%
Verizon	102	757	1	740	0.0256	0.5047	5.07%
AT&T UMTS	195	880	2	565	0.0011	0.5867	0.18%
AT&T UMTS	195	1900	2	1077	0.0020	1.0000	0.20%
AT&T LTE	195	734	1	1615	0.0015	0.4893	0.31%
AT&T GSM	195	880	1	283	0.0003	0.5867	0.05%
AT&T GSM	195	1900	4	646	0.0024	1.0000	0.24%
						Total	**26.38%**

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 identically match the total value reflected 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 Crown Castle Structural Analysis Report dated 4/20/2012.

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 **26.38% 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 10, 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.

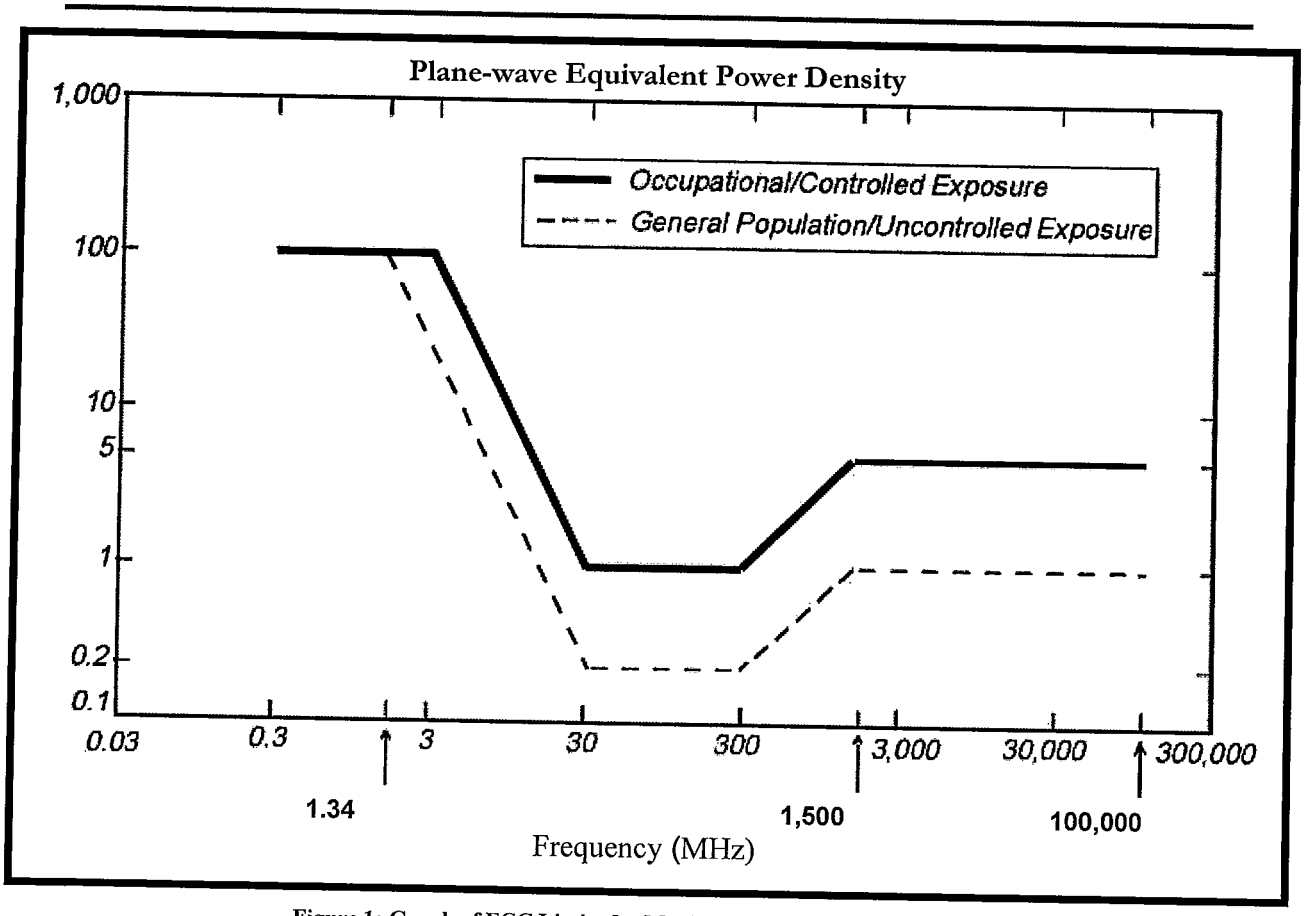
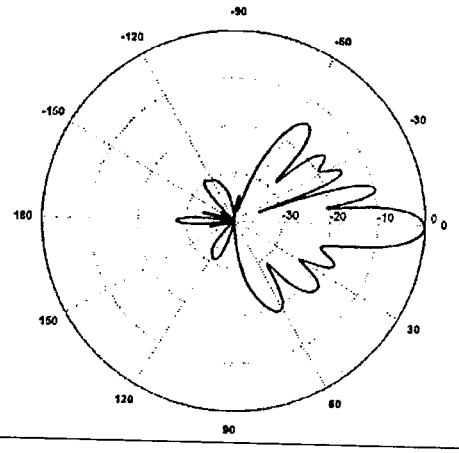


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

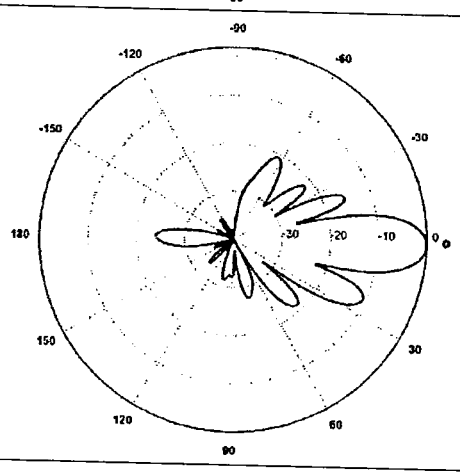
700 MHz

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 Linear ±45°
Size L x W x D:	96.0" x 12.0" x 6.0"



850 MHz

Manufacturer:	Kathrein-Scala
Model #:	800 10121
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	14.5°
Horizontal Beamwidth:	86°
Polarization:	±45°
Size L x W x D:	54.5" x 10.3" x 5.9"



1900 MHz

Manufacturer:	Kathrein-Scala
Model #:	800 10121
Frequency Band:	1850-1990 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	6.6°
Horizontal Beamwidth:	85°
Polarization:	±45°
Size L x W x D:	54.5" x 10.3" x 5.9"