



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

June 8, 2012

Jennifer Young Gaudet
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-CING-006-120521** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 664 Rimmon Hill Road, Beacon Falls, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction 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;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated May 18, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also 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.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include 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. Thank you for your attention and cooperation.

Very truly yours,



Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Gerard F. Smith, First Selectman, Town of Beacon Falls
Brian Herb, Zoning Enforcement Officer, Town of Beacon Falls
American Tower Corporation



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

May 21, 2012

The Honorable Gerard F. Smith
First Selectman
Town of Beacon Falls
10 Maple Avenue
Beacon Falls, CT 06403

RE: **EM-CING-006-120521** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 664 Rimmon Hill Road, Beacon Falls, Connecticut.

Dear First Selectman Smith:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by June 4, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

Enclosure: Notice of Intent

c: Brian Herb, Zoning Enforcement Officer, Town of Beacon Falls



EM-CING-006-120521

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

ORIGINAL

May 18, 2012

RECEIVED
MAY 21 2012

CONNECTICUT
SITING COUNCIL

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
664 Rimmon Hill Road, Beacon Falls, 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 First Selectman of the Town of Beacon Falls.

AT&T plans to modify the existing wireless communications facility managed by American Tower Corporation through an arrangement with SBC and located at 664 Rimmon Hill Road in the Town of Beacon Falls (coordinates 41°-24’-26” N, 73°-04’-47” 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).

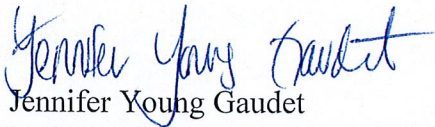
1. AT&T will add (3) LTE panel antennas to the existing platform with an approximate center line of 159’, resulting in a total of nine (9) antennas. Six (6) RRUs

(remote radio units) and a surge arrester will be mounted behind the antennas at the platform level. AT&T will also place a DC power and fiber run from the equipment to the antennas, up the tower along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 173' structure.

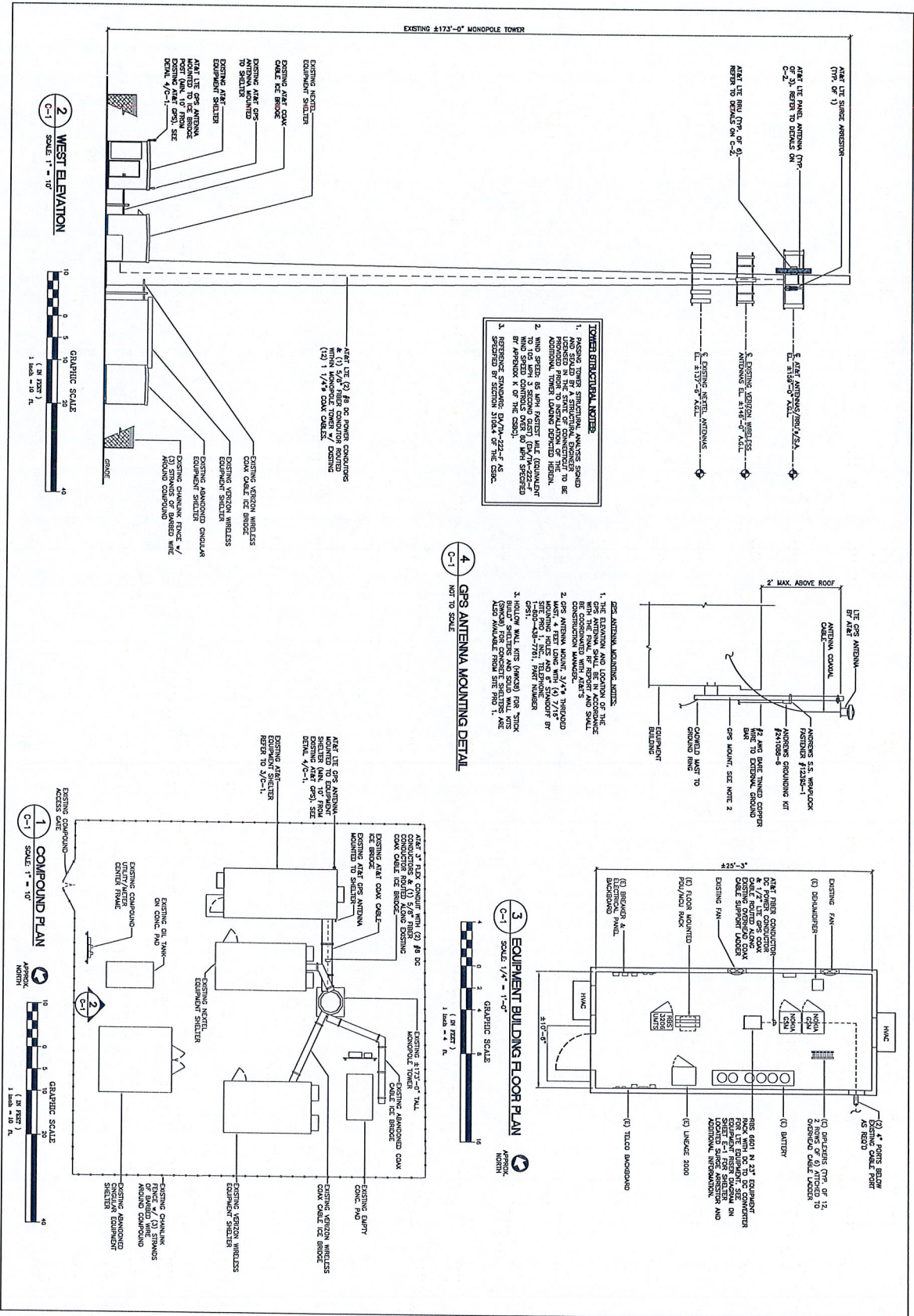
2. The proposed changes will not extend the site boundaries. AT&T will place related equipment in its existing shelter, and will mount a GPS antenna to the shelter. These changes will be within the existing compound and will have no effect on the site boundaries.
3. The proposed changes will not increase 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 1.51%; the combined site operations will result in a total power density of approximately 15.63%.

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

cc: Honorable Gerard F. Smith, First Selectman, Town of Beacon Falls
Wilbur and Joan Weed (underlying property owners)



TOWER STRUCTURAL NOTES

1. PASSING TOWER STRUCTURAL ANALYSIS SHOULD BE PROVIDED BY THE CLIENT. THE ANALYSIS SHOULD BE PROVIDED IN THE STATE OF CONNECTICUT AND SHOULD BE APPROVED BY THE CLIENT. THE ANALYSIS SHOULD BE PROVIDED TO THE CLIENT BY THE CLIENT. THE ANALYSIS SHOULD BE PROVIDED TO THE CLIENT BY THE CLIENT.
2. WIND SPEEDS TO WHICH EXISTING TOWER IS EQUIVALENT TO 110 MPH. SECONDARY WIND SPEEDS TO WHICH EXISTING TOWER IS EQUIVALENT TO 110 MPH. SECONDARY WIND SPEEDS TO WHICH EXISTING TOWER IS EQUIVALENT TO 110 MPH.
3. REFERENCE STANDARD: ENR/11-22-F AS SPECIFIED BY SECTION 3106.4 OF THE SPEC.

GPS ANTENNA MOUNTING DETAIL

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE GPS ANTENNA MOUNTING DETAIL. THE GPS ANTENNA SHALL BE MOUNTED TO THE ROOF OF THE EQUIPMENT BUILDING. THE GPS ANTENNA SHALL BE MOUNTED TO THE ROOF OF THE EQUIPMENT BUILDING.
2. GPS ANTENNA MOUNTING SHALL BE PROVIDED WITH A 1/2" DIA. HOLE IN THE ROOF. THE GPS ANTENNA SHALL BE MOUNTED TO THE ROOF OF THE EQUIPMENT BUILDING.
3. HOLLOW WALL W/INS (INCHES) FOR STICK (SHOULD BE CONSIDERED FOR THE GPS ANTENNA MOUNTING DETAIL. THE GPS ANTENNA SHALL BE MOUNTED TO THE ROOF OF THE EQUIPMENT BUILDING.

EQUIPMENT BUILDING FLOOR PLAN

SCALE 1/4" = 1'-0"

GRAPHIC SCALE
1 inch = 4 ft.

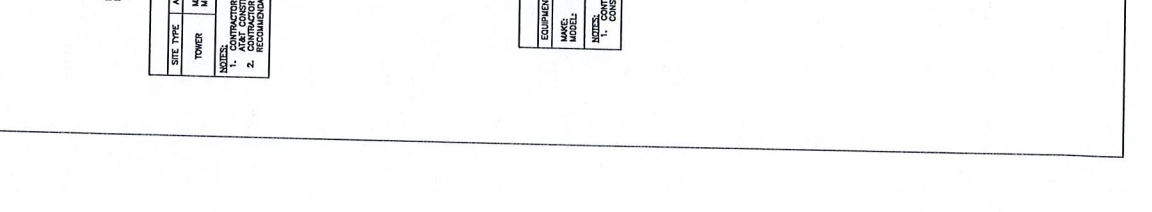
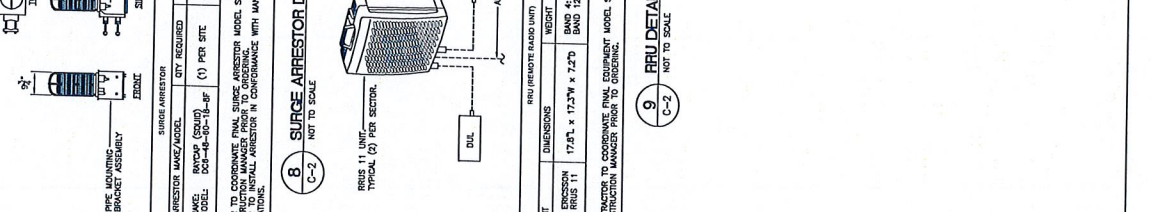
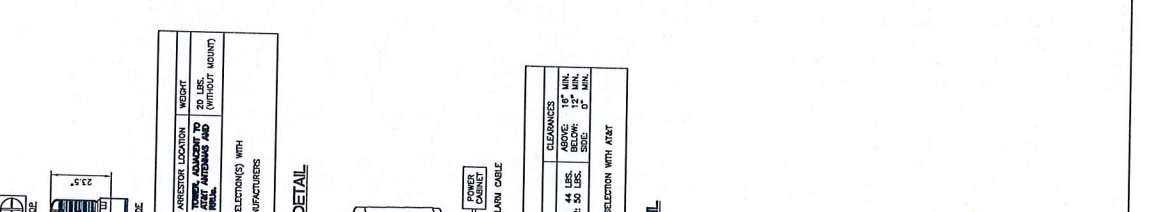
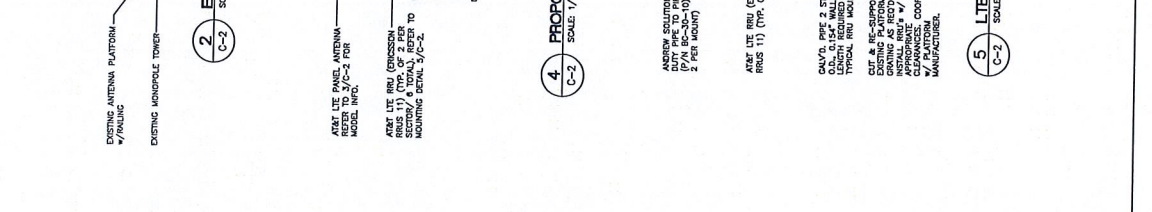
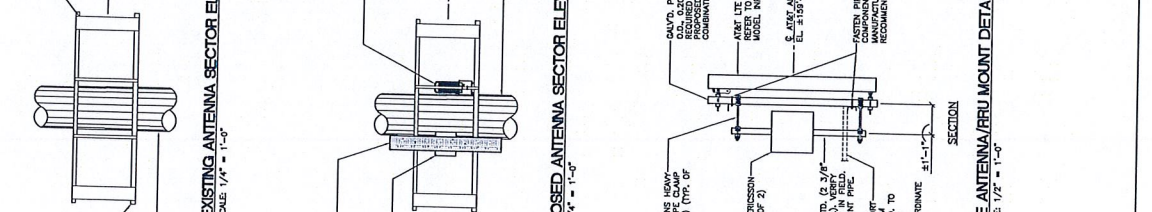
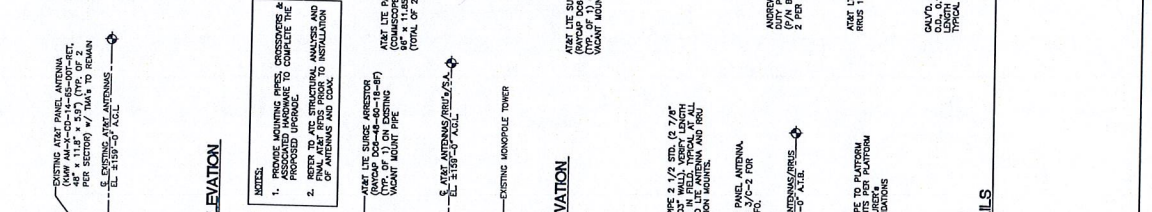
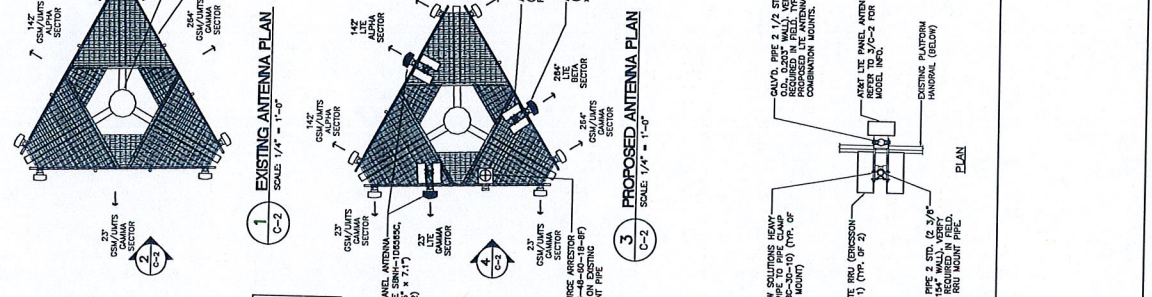
<p>AT&T MOBILITY</p> <p>WIRELESS COMMUNICATIONS FACILITY SITE UPGRADE</p> <p>CT2161</p> <p>BEACON FALLS</p> <p>654 RIMMON HILL RD. BEACON FALLS, CT 06042</p>	<p>GENEX</p> <p>6000 WILSON AVENUE SUNNYVALE, CA 94085</p> <p>www.genex.com</p>	<p>NETLINK</p> <p>6000 WILSON AVENUE SUNNYVALE, CA 94085</p> <p>www.netlink.com</p>	<p>at&t</p>	<p>DAVID M. FAZIO REGISTERED PROFESSIONAL ENGINEER NO. 11114-0003 STATE OF CONNECTICUT</p>	<table border="1"> <tr> <th>REVISION</th> <th>DATE</th> <th>BY</th> <th>CHK'D</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>5/16/12</td> <td>DB</td> <td>CFC</td> <td>CONSTRUCTION - CLIENT REVIEW</td> </tr> <tr> <td>0</td> <td>3/21/12</td> <td>FLO</td> <td>DB</td> <td>CONSTRUCTION - CLIENT REVIEW</td> </tr> </table>	REVISION	DATE	BY	CHK'D	DESCRIPTION	1	5/16/12	DB	CFC	CONSTRUCTION - CLIENT REVIEW	0	3/21/12	FLO	DB	CONSTRUCTION - CLIENT REVIEW	<p>ISSUED BY: DB</p> <p>DRAWN BY: FLO</p> <p>CHK'D BY: CFC</p>
REVISION	DATE	BY	CHK'D	DESCRIPTION																	
1	5/16/12	DB	CFC	CONSTRUCTION - CLIENT REVIEW																	
0	3/21/12	FLO	DB	CONSTRUCTION - CLIENT REVIEW																	

PLANS, ELEVATION AND DETAIL

C-1

Sheet No. 3 of 5

BEACON FALLS CT 06033
CT12161
 WIRELESS COMMUNICATIONS FACILITY LICENSE
AT&T MOBILITY



NOTE:
 1. THESE MOUNTING AND RADIATION PATTERNS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY THE MOUNTING AND RADIATION PATTERNS FOR THE FINAL EQUIPMENT MODEL SELECTION WITH AT&T.
 2. ASSOCIATED HARDWARE TO COMPLETE THE PROPOSED UPGRADE TO THE ANTENNA AND RRU SHALL BE PROVIDED BY THE CONTRACTOR.
 3. REFER TO THE STRUCTURAL ANALYSIS AND DESIGN REPORT FOR THE ANTENNA AND RRU MOUNTING DETAIL 5/C-2.
 4. AT&T ANTENNAS/RRUs/RRU/E/A. EL. 315'-0" A.C.L.
 5. AT&T ANTENNAS/RRU/E/A. EL. 315'-0" A.C.L.
 6. AT&T ANTENNAS/RRU/E/A. EL. 315'-0" A.C.L.
 7. AT&T ANTENNAS/RRU/E/A. EL. 315'-0" A.C.L.
 8. AT&T ANTENNAS/RRU/E/A. EL. 315'-0" A.C.L.
 9. AT&T ANTENNAS/RRU/E/A. EL. 315'-0" A.C.L.

SITE TYPE	ANTENNA MAKE/MODEL	QTY REQUIRED	ARRISSTOR LOCATION	WIDTH
TOWER	ARRISSTOR MAKE/MODEL	(1) PER SITE	ARRISSTOR LOCATION	29 LBS. (WITHOUT MOUNT)

NOTES:
 1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T.
 2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
ARRISSTOR MAKE/MODEL	17.8" x 17.37" x 7.2"	29 LBS. (WITHOUT MOUNT)	ARRISSTOR MAKE/MODEL

NOTES:
 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T.
 2. CONSTRUCTION MANAGER PRIOR TO ORDERING.

CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T.
CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

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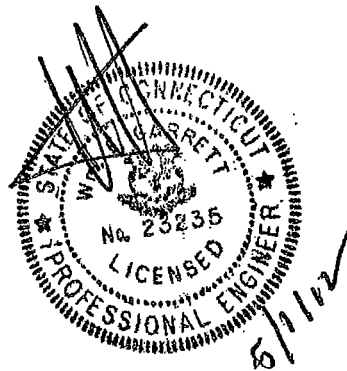
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 173 ft Valmont Monopole
ATC Site Name : Beacon Falls, CT
ATC Site Number : 302524
Proposed Carrier : AT&T Mobility
Carrier Site Name : Beacon Falls
Carrier Site Number : 10035091/CT2161
County : New Haven
Eng. Number : 49173521
Date : April 27, 2012*
Usage : 95%
Portholes Required : No
Result : Pass

Submitted by:
Christina Minor
Project Engineer

American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27518
Phone: 919-468-0112



Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 173 ft Valmont Monopole located at 664 Rimmon Hill Road, Seymour, CT 06483, New Haven County (ATC site #302524). The tower was originally designed and manufactured by Valmont (Drawing #DC3268Z, dated May 28, 1996). The tower has been extended per design by SpectraSite (Drawing #CT-0060-M1 Rev. 5, dated June 10, 2002).

Analysis

The tower was analyzed using Semaan Engineering Solutions, Inc., Software.

Basic Wind Speed: 105 mph (3-Second Gust)
 Radial Ice: 50 mph (3-Second Gust) w/ 0.75" ice
 Code: ANSI/TIA-222-G
 2003 IBC with 2005 Connecticut Supplements and 2009 Connecticut Amendments

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
157.0	6	Powerwave P65-15-XLH-RR	Platform with Handrails	(12) 1 1/4"	AT&T Mobility
	6	Powerwave TT08-19DB111-001			
146.0	2	Andrew LNX-6514DS-VTM	Platform with Handrails	(15) 1 5/8"	Verizon
	6	Decibel 948F85T2E-M			
	6	Decibel DB844H80E-XY			
	1	Powerwave P65-16-XL			
	6	RFS FD9R60004/1C-3L			
137.5	9	48" x 12" Panels	Low Profile Platform	(12) 1 5/8"	Sprint Nextel
	3	72" x 12" Panels			

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
157.0	3	Andrew SBNH-1D6565C	Platform with Handrails	(2) 19.7 mm* (1) 10 mm*	AT&T Mobility
	6	Ericsson RRUS 11			
	6	KMW KDXCV001217			
	1	Raycap DC6-48-60-18-8F			

(*) to be installed inside of (1) 3" conduit

Install proposed coax inside monopole.

Results

The maximum structure usage is: 95%

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports **may not** be installed without installation drawings providing the location, size and welding requirements of each port.

To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Design Reactions w/ 1.35 Multiplier*	Current Analysis Reactions	% Of Design w/ 1.35 Multiplier
Moment (ft-kips)	3,020.9	4,078.2	3,591.9	88
Shear (kips)	28.0	37.8	31.9	84

() factored by 1.35 per ANSI/TIA-222-G, 15.5.1*

The structure base reactions resulting from this analysis are acceptable when compared to the reactions shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Conclusion

Based on the analysis results, the structure meets the requirements per the ANSI/TIA-222-G standard and the 2003 IBC with 2005 CT supplements and 2009 CT amendments.

The tower and foundation can support the existing and proposed antennas with the transmission line distribution as described in this report.

If you have any questions or require additional information, please call 919-466-5006.

Standard Conditions

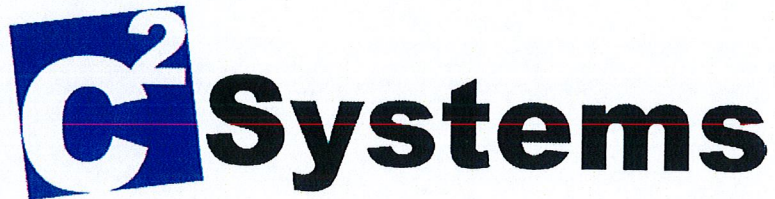
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



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

Calculated Radio Frequency Emissions



at&t

CT2161 – Beacon Falls

664 Rimmon Hill Road, Seymour, CT 06483

(a.k.a. 664 Rimmon Hill Road, Beacon Falls, CT)

May 17, 2012

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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 664 Rimmon Hill Road in Seymour, CT. The coordinates of the tower are 41°24'25.90"N, 73° 4'45.40"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:

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

Where:

EIRP = Effective Isotropic Radiated Power

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

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 UMTS	157	890	1	500	0.0073	0.5867	1.24%
Cingular UMTS	157	1900	1	500	0.0073	1.0000	0.73%
Cingular GSM	157	890	4	296	0.0173	0.5867	2.94%
Cingular GSM	157	1930	2	427	0.0125	1.0000	1.25%
Nextel	137.5	851	9	100	0.0171	0.5673	3.02%
Verizon	148	869	9	272	0.0402	0.5793	6.94%
Verizon	148	1970	3	407	0.0200	1.0000	2.00%
Verizon	148	757	1	666	0.0109	0.5047	2.17%
AT&T UMTS	159	880	2	745	0.0021	0.5867	0.36%
AT&T UMTS	159	1900	2	1052	0.0030	1.0000	0.30%
AT&T LTE	159	734	1	1375	0.0020	0.4893	0.40%
AT&T GSM	159	880	1	372	0.0005	0.5867	0.09%
AT&T GSM	159	1900	4	631	0.0036	1.0000	0.36%
						Total	15.63%

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 American Tower Engineering Services Structural Analysis Report dated 4/27/2012.

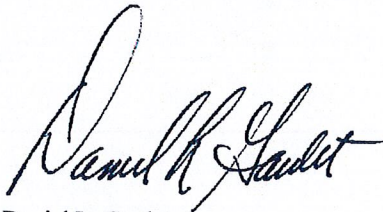
5. Conclusion

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 **15.63% 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 17, 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 Exposure⁴

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 Exposure⁵

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.

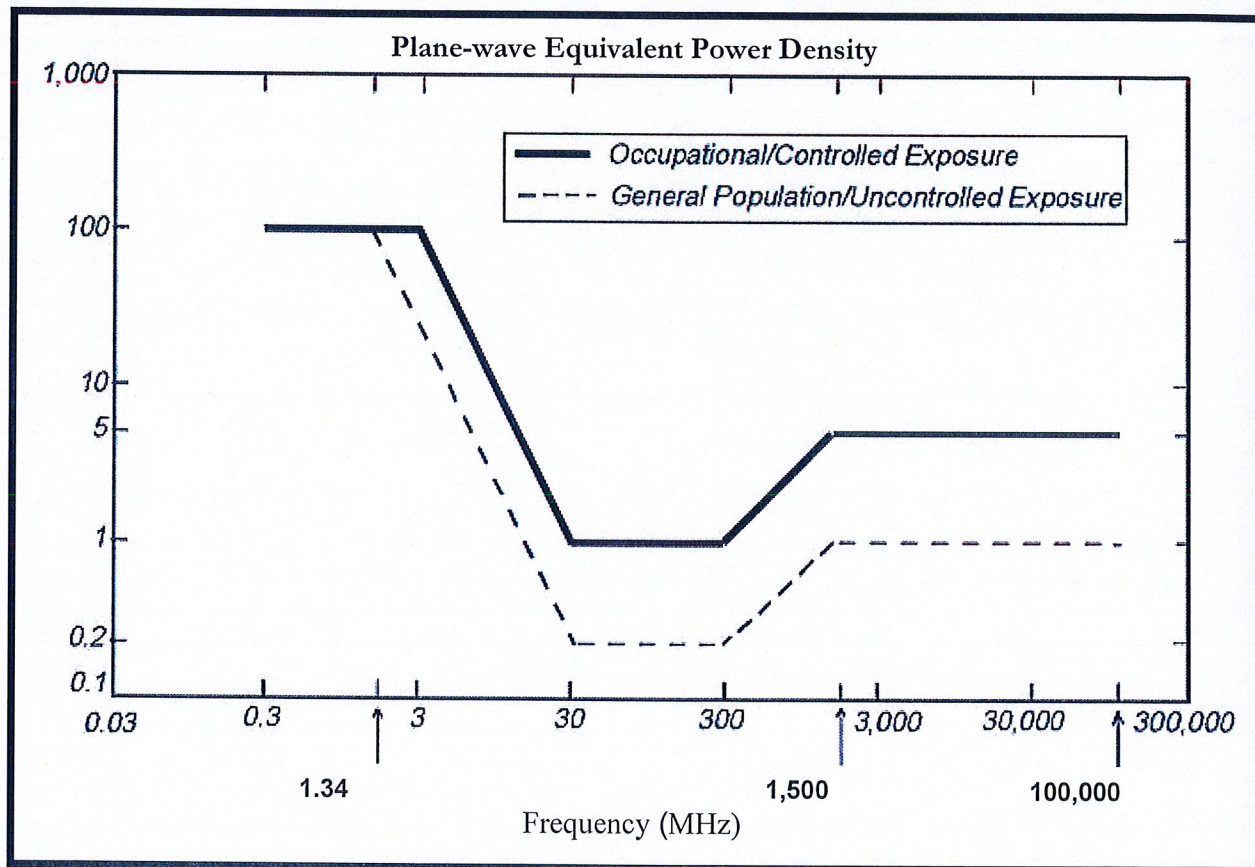
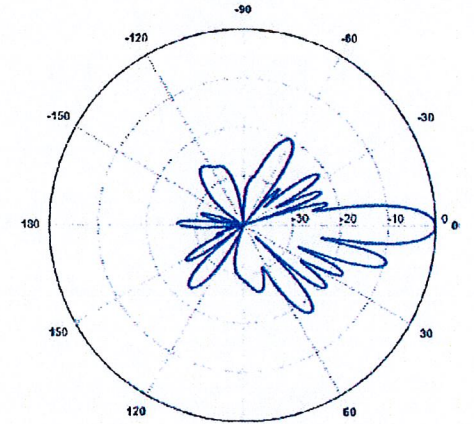
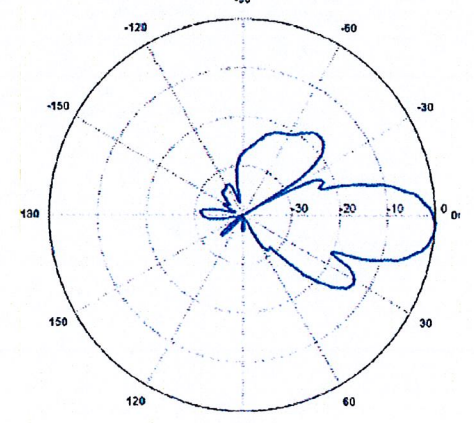


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

<p>700 MHz</p> <p>Manufacturer: Commscope Model #: SBNH-1D6565C Frequency Band: 698-806 MHz Gain: 13.6 dBd Vertical Beamwidth: 8.6° Horizontal Beamwidth: 71° Polarization: Dual Slant +/- 45° Size L x W x D: 96.42"x11.85"x7.1"</p>	
<p>850 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-14-65-00T Frequency Band: 806-896 MHz Gain: 12.7 dBd Vertical Beamwidth: 16.5° Horizontal Beamwidth: 65° Polarization: Dual Slant +/- 45° Size L x W x D: 48"x11.8"x5.9"</p>	
<p>1900 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-14-65-00T Frequency Band: 1850-1990 MHz Gain: 14.2 dBd Vertical Beamwidth: 8.5° Horizontal Beamwidth: 61° Polarization: Dual Slant +/- 45° Size L x W x D: 48"x11.8"x5.9"</p>	