

HURWITZ & SAGARIN LLC

May 2, 2002

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RECEIVED

MAY - 2 2002

CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification**
SBA Telecommunications Facility
66 Wall Street
Hebron, Connecticut

Dear Mr. Phelps:

SBA Properties, Inc. ("SBA") hereby requests acknowledgment that the proposed co-location of AT&T Wireless PCS, LLC ("AT&T Wireless") on a telecommunications tower owned by SBA and located at 66 Wall Street, Hebron, Connecticut ("Wall Street Facility") constitutes an exempt modification pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes Section 16-50g et. seq. (PUESA), and Section 16-50j-72(b)(2) of the Regulations of the Connecticut State Agencies adopted pursuant to PUESA. In accordance with R.C.S.A. Section 16-50j-73, a copy of this letter has been sent to Victoria H. Avelis, the Chairwoman of Hebron's Board of Selectman.

SBA and AT&T Wireless have agreed to the shared use of the Wall Street Facility, as detailed below.

The Wall Street Facility

The Wall Street Facility consists of a 150 foot flagpole monopole within a site compound which is surrounded by a chain link fence. The facility can support the antenna arrays and related equipment of several carriers including Verizon which was approved by the Siting Council on March 15, 2001. (TS-VER-067-010216).

AT&T Wireless' Facility

AT&T Wireless will install 3 panel antennas at an antenna center line height of approximately 115 feet. A structural integrity report, attached as Exhibit A, was generated by Chazen Engineering and Land Surveying Co. P.C. and confirms that the tower is structurally capable of supporting AT&T Wireless' proposed antennas. AT&T Wireless will also install equipment cabinets on a concrete pad within the existing fenced compound.

AT&T Wireless' Facility Constitutes An Exempt Modification

For the following reasons, the proposed modifications to the Wall Street Facility meet the exempt modification criteria set forth in R.C.S.A. Section 16-50j-72(b)(2):

1. As evidenced by the attached Tower Elevation Drawing (Exhibit B), the proposed modification will not increase the height of the tower as AT&T Wireless' antennas will be installed at a center line height of approximately 115 feet.
2. As evidenced by the attached Site Plan Drawing (Exhibit B), the installation of AT&T Wireless' equipment within an existing building will not require an extension of the site boundaries.
3. The proposed modifications will not increase the noise levels at the existing facility by six decibels or more.
4. As set forth in the Emissions Report prepared by C Squared Systems, LLC, attached as Exhibit C, the operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. The "worst-case" percentage for RF Power density for a point at the tower base is calculated to be 5.68% for AT&T Wireless' antennas. Based upon Maximum Power Densities previously submitted to the Council for Sprint and Verizon, the calculated "worst case" cumulative RF power density at the site is only 14.4% of the applicable standard.

For the foregoing reasons, SBA respectfully submits that the proposed addition of AT&T Wireless' antenna and equipment at the Wall Street Facility constitutes an exempt modification under R.C.S.A. Section 16-50j-72(b)(2)

Very truly yours,

Julie M. Donaldson

cc: Victoria H. Avelis, Chairwoman, Board of Selectman, Hebron
Harold Hewett, Bechtel (CT-907-007-865)
Mark Roberts, SBA
Christopher Fisher Esq., Cuddy & Feder & Worby

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Dutchess County Office
Phone: (845) 454-3980

New England Office
Phone: (781) 556-1037

20 Gurley Avenue, Troy, New York 12182
Phone: (518) 235-8050 Fax: (518) 235-8051
Email: albany@chazencompanies.com

Orange County Office
Phone: (845) 567-1133

North Country Office
Phone: (518) 812-0513

April 25, 2002

Mr. Randy Freschlin
SBA Network Services, Inc.
80 Eastern Boulevard
Glastonbury, CT 06033

Re: Structural Review of the Central Hebron Flagpole
TCC Job Number: NE038.00
SBA Site No.: 4374S
AWS Site No.: CT-907-007-865

Dear Mr. Freschlin:

As requested, The Chazen Companies (TCC) has performed a structural review of the above referenced flagpole located at 66 Wall Street in the Town of Hebron, New London County, Connecticut. Our review is based on information provided by SBA and design drawings by PiRod, Inc., dated July 19, 2000.

Based on our review, the monopole was designed to support four (4) antenna arrays consisting of three (3) Panel antennas located inside of the monopole at elevations of 145 feet, 135 feet, 125 feet, and 115 feet above ground level (AGL). Additionally, the monopole was also designed to support a GPS antenna at 75 feet AGL.

Currently the following antennas are installed on the tower:

- Three (3) EMS RR90-17 panel antennas for Sprint PCS.
- Three (3) Allgon 7391 panel antennas for Verizon Wireless.

Additionally, there is a planned installation of six (6) EMS RR90-12 panel antennas for Nextel.

AT&T Wireless proposes to install three (3) Allgon 7250 panel antennas at an elevation of 115 feet AGL.

The design drawings provided indicate that the monopole was designed for a basic wind speed of 85 mph and ½" radial ice with wind/ice reduction in accordance with ANSI/TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*. Revision F of this standard is the newest revision, and thus meets or exceeds the requirements of the previous revision, which is referenced in the 1996 BOCA National Building Code. The Connecticut State Building Code requires that television and radio towers be designed in accordance with Section 3108.4 of the 1996 BOCA National Building Code. Therefore TCC can conclude that the monopole design meets or exceeds the Connecticut State Building Code.

Based upon this information, TCC has determined that the existing monopole and its foundation are capable of supporting the planned and proposed antennas, provided the monopole and foundation were constructed in accordance with all applicable local, state, and federal codes.

If you have any questions, or require any additional information please do not hesitate to contact this office.

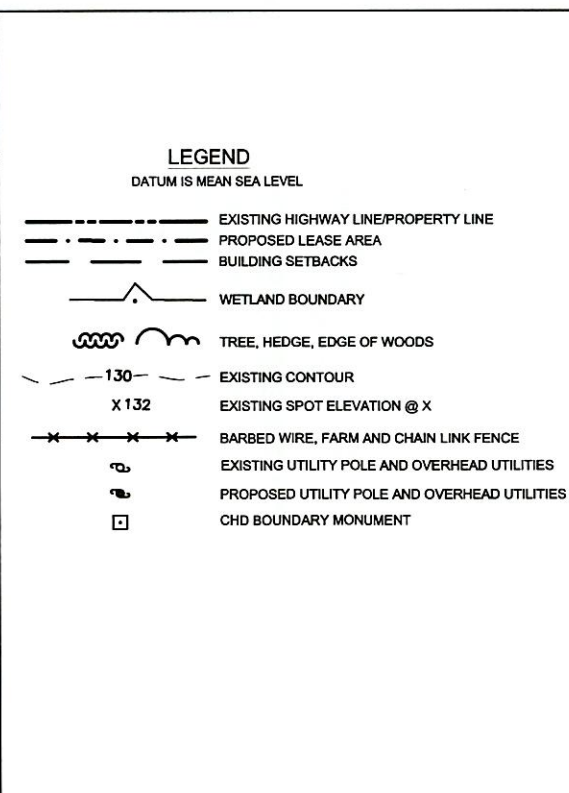
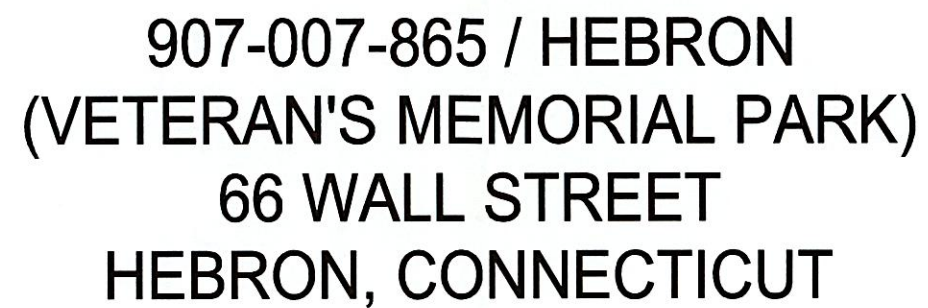
Sincerely,

Richard Chazen, P.E.
Principal

ksp/

cc: Kelly Libolt, TCC
Kelly Phillips, TCC
File





DRAWING INDEX	
DRAWING	TITLE
T1	COVER SHEET
Z1	SITE LAYOUT AND ELEVATION

DRAWING NUMBER	REV
CT-865T1	0



C Squared Systems, LLC
13 Forest Drive
East Kingston, NH 03827
Phone 603-770-3143
Email:
scott.pollister@csquaredsystems.com

Calculated Radio Frequency Emissions

Site Number 907-007-865
66 Wall Street, Hebron, CT

SBA Network Services, Inc

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1. Introduction

The purpose of this report is to investigate compliance with applicable federal, state and local EMF regulations for the proposed 150-foot wireless telecommunications facility at 66 Wall Street in Hebron, CT.

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are much more conservative (higher) than the actual signal levels will be from the finished installation.

The results will be listed as a percentage of current Maximum Permissible Exposure (% MPE) limits as listed in the FCC OET Bulletin 65 Edition 97-01. Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ emitted is called the power density. The general population exposure limit for the cellular band is $580 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

2. Site Data

Carrier	Freq (MHz)	# of Channels per Sector	# of Sectors	Height of Antenna	Power per Channel (Watts EIRP)
AT&T	1900	16	3	115'	250
Sprint	1900	11	3	125'	280
Verizon	800	24	3	135'	100

3. RF Exposure Prediction Methods

The FCC has established the following equation to estimate the power density in the far-field region.

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

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial distance = $\sqrt{H^2 + V^2}$

H = Horizontal distance from antenna

V = Vertical distance from bottom of antenna

Maximum Off beam loss is limited to 10 dB to insure a conservative result

4. 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 limits for Maximum Permissible Exposure (MPE) for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The attachments labeled Table 1 and Figure 1 are excerpts from OET Bulletin 65 and define the Maximum Exposure Limit. As shown in these excerpts, each frequency band has different exposure limits, requiring power density to be reported as a percent of Maximum Permissible Exposure (MPE) when dealing with carriers transmitting in different frequency bands.

5. Calculation Results

The calculated results indicate that radio frequency emissions expected from this installation are significantly less than the regulatory emission limits for public exposure. Specific maximum power densities and their percentage of the limits are listed below for each individual carrier.

Previously Submitted Maximum Power Densities

Carrier	Max % Limits	Submitted For	Report Date	Date Submitted
Sprint	2.29	Verizon Wireless	2/16/01	2/16/01
Verizon	6.43	Verizon Wireless	2/16/01	2/16/01

New Additional Carrier Maximum Power Densities

Carrier	Calculated Maximum Power Density ($\mu\text{W}/\text{cm}^2$)	MPE Limit ($\mu\text{W}/\text{cm}^2$)	Max % Limits
AT&T	56.8	1000	5.68

Cumulative Percent of Maximum Permissible Exposure

	Max % Limits
Cumulative	14.4

6. Conclusion

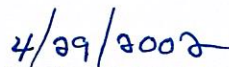
All of the calculations in this report were computed for the 150-foot wireless facility in Hebron, CT. As can be seen from the above tables and attachments, the expected aggregate radio frequency emissions from the proposed installation are extremely low and well below the regulatory emission limits for general public exposure, even under very conservative assumptions. The highest aggregate percent Maximum Permissible Exposure are less than 14.4% of the FCC limits for general public as outlined in FCC OET Bulletin 65 Edition 97-01.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations were computed in accordance with and using techniques in compliance with ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Scott Pollister
C Squared Systems



Date

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

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Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board
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Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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

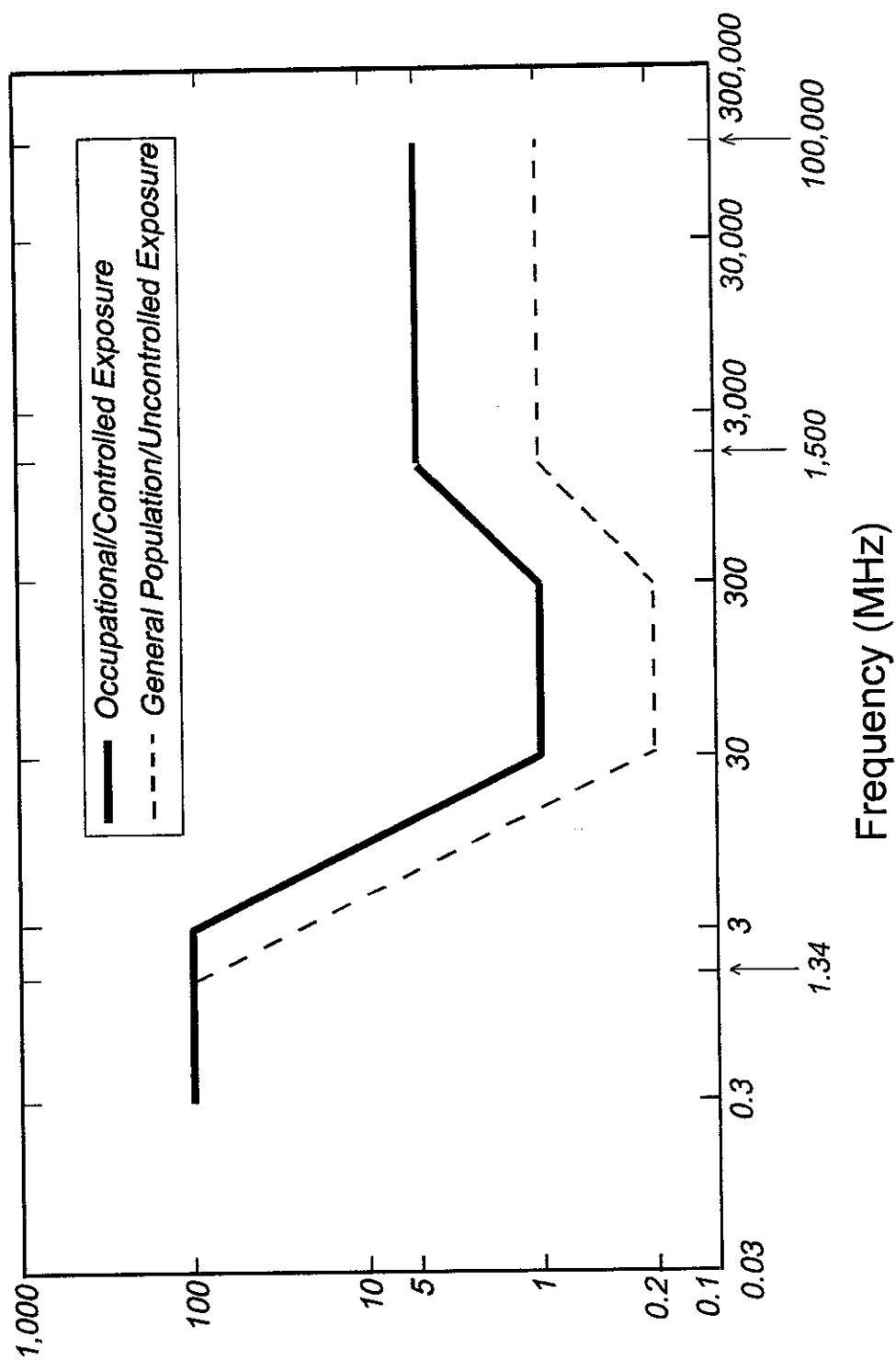
f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **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.

NOTE 2: **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 can not exercise control over their exposure.

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density





C Squared Systems, LLC
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East Kingston, NH 03827
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Email:

scott.pollister@csquaredsystems.com

Calculated Radio Frequency Emissions

Site Number 907-007-865

66 Wall Street, Hebron, CT

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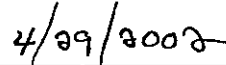
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Scott Pollister
C Squared Systems



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References

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f = frequency in MHz

*Plane-wave equivalent power density

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Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density

