ONS FACILITY AT CONNECTICUT COUNCIL

## NOTICE OF INTEL EXISTING TELECOMMUNICATIONS FACILITY AT 185 FISK ROAD, HAMPTON, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. seq. ("PUESA"), and Sections 16-50j-72(b) of the Regulations of Connecticut State Agencies adopted pursuant to the PUESA, AT&T Wireless PCS, LLC d/b/a AT&T Wireless ("AT&T Wireless") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 185 Fisk Road, Hampton, Connecticut (the "Fisk Road Facility"), owned by American Tower Corporation ("American Tower"). AT&T Wireless and American Tower have agreed to share the use of the Fisk Road Facility, as detailed below.

#### The Fisk Road Facility

The Fisk Road Facility consists of an approximately one hundred sixty (160) foot guyed lattice tower (the "Tower") and associated equipment currently being used for wireless communications by Nextel, Verizon and Sprint. A chain link fence surrounds the Tower compound. The current surrounding land uses include a commercial logging operation and undeveloped land.

#### **AT&T Wireless' Facility**

As shown on the enclosed plans prepared by Tectonic/Keyes Associates, including a site plan and tower elevation of the Fisk Road Facility, AT&T Wireless proposes shared use of the Facility by placing antennas on the Tower and equipment cabinets needed to provide personal communications services ("PCS") within the existing fenced compound. AT&T Wireless will install 6 panel antennas at approximately the 130 foot level of the Tower and associated equipment cabinets (2 proposed, 2 future, each 76"H x 30" W x 30" D) on a concrete pad. As evidenced in the letter of structural integrity prepared by Broadcast Components, Inc., annexed hereto as Exhibit A, AT&T has confirmed that the tower is structurally capable of supporting the addition of AT&T Wireless' antennas.

#### AT&T Wireless' Facility Constitutes An Exempt Modification

The proposed addition of AT&T Wireless' antennas and equipment to the Fisk Road Facility constitutes an exempt "modification" of an existing facility as defined in Connecticut General Statutes Section 16-50i(d) and Council regulations promulgated pursuant thereto. Addition of AT&T Wireless' antennas and equipment to the Tower will not result in an increase of the Tower's height nor extend the site boundaries. Further, there will be no increase in noise levels by six (6) decibels or more at the Tower site's boundary. As set forth in an Emissions Report prepared by Satish Bhandare, Radio Frequency Engineer, annexed hereto as Exhibit B, the total radio frequency electromagnetic radiation power density at the Tower site's boundary will not

be increased to 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. For all the foregoing reasons, addition of AT&T Wireless' facility to the Tower constitutes an exempt modification which will not have a substantially adverse environmental effect.

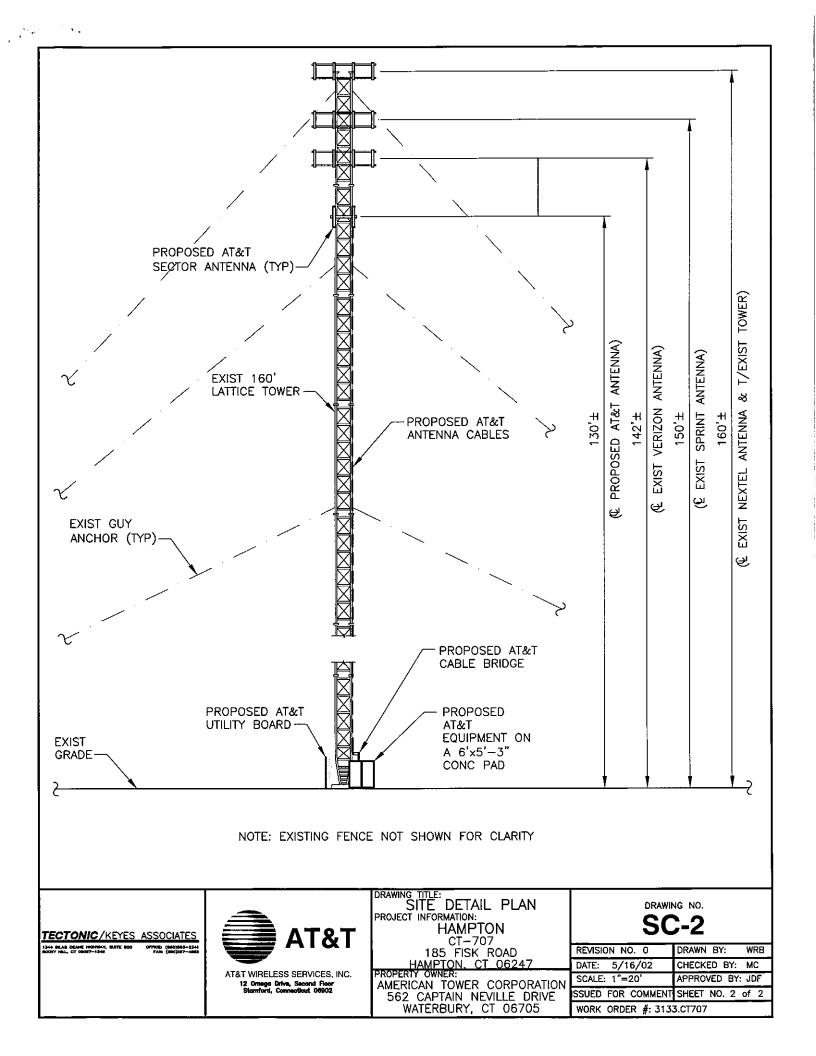
#### Conclusion

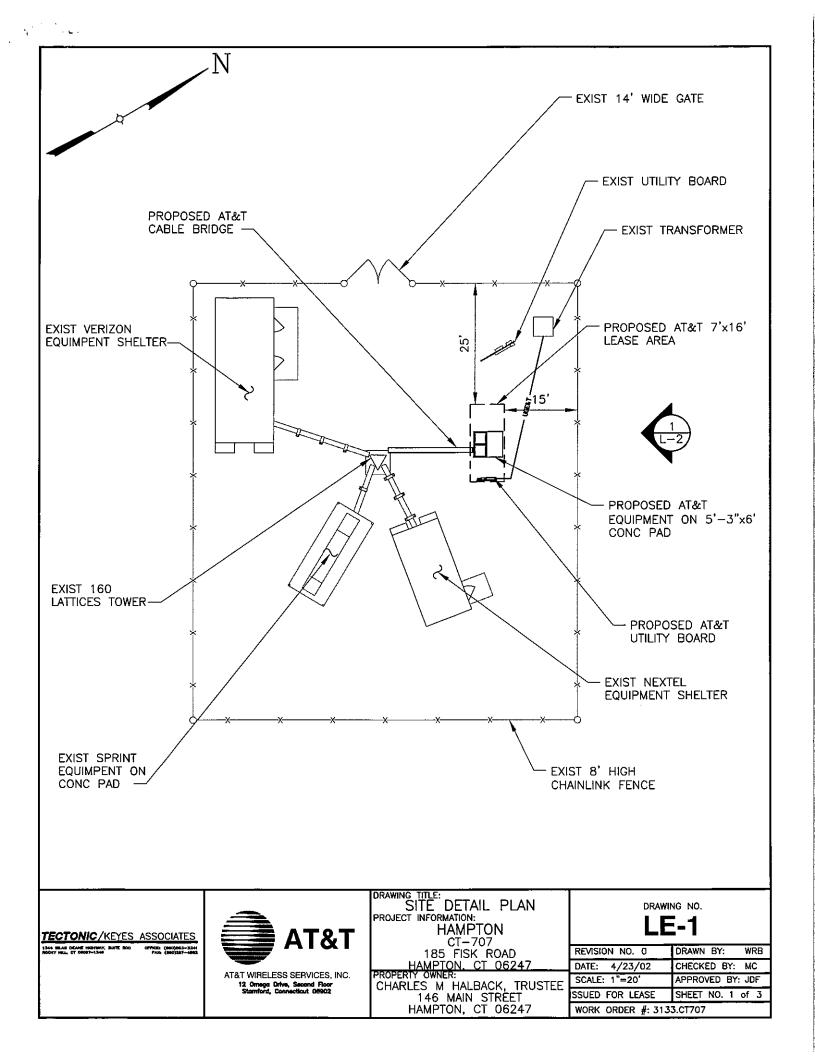
Accordingly, AT&T Wireless requests that the Connecticut Siting Council acknowledge that its proposed modification to the Fisk Road Facility meets the Council's exemption criteria.

Respectfully Submitted,

Christopher B/Eisher, Esq. On behalf of AT&T Wireless

cc: First Selectman, Town of Hampton Joanne Desjardins, Pinnacle







**Broadcast Components Inc.** 3455 Table Mesa Dr, Suite H182 **Boulder, CO, 80305** 

Voice: Fax:

1-800-584-8839 1-800-584-3585 Email: bci-towers@attbi.com

April 18, 2002

Attn: Mr. Steven Schamberg

AMERICAN TOWER CORPORATION

10 Presidential Way Woburn, MA 01801

Re:

Structural Review of the 160 ft. Guyed Tower at Hampton, CT (Site No. 10029)

Dear Mr. Schamberg,

Further to your request on April 10, 2002, we have completed the structural review of the 160 ft. Fred A. Nudd guyed tower at Hampton, CT, for the proposed addition of (6) Allgon 7250.03 panels for ATT at 130 ft. elevation with (12) 1-1/4" transmission lines.

Provided that SNET and OmniPoint do not install on this tower per your email of April 10, 2002, the tower will be more than adequate, satisfying the structural strength requirements of TIA/EIA-222-F for the proposed addition of ATT.

Our previous structural analysis report was completed on March 19, 2001, for the proposed addition of OmniPoint at 120 ft. elevation with (12) EMS RR90-17-02DP panels and (24) 1-5/8" transmission lines.

We trust you find this satisfactory. Please do not hesitate to call if you should have any questions regarding our analysis or assumptions.

Reviewed By:

Michael T. De Boer, PE

Best Regards,

Broadcast Components Inc.

Brad Cook, PE





## RF Exposure Analysis for Proposed AT&T Wireless Antenna Facility

SITE ID: 907-009-707

May 16, 2002

Prepared by AT&T Wireless Services, Inc. Satish Bhandare, RF Engineer

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#### 1. Introduction

This report constitutes an RF exposure analysis for the proposed AT&T Wireless antenna facility to be located at 185 Fisk Rd, Hampton, CT 06247. This analysis uses site-specific engineering data to determine the predicted levels of radio frequency (RF) electromagnetic energy in the vicinity of the proposed facility and compares those levels with the Maximum Permissible Exposure (MPE) limits established by the Federal Communications Commission.

#### 2. Site Data

Site Name: <b>Hampton</b>	
Number of simultaneously operating channels	12
Type of antenna	Allgon 7250.02
Power per channel (Watts ERP)	250.0 Watts
Height of antenna (feet AGL)	130.00 feet
Antenna Aperture Length	5 feet

#### 3. RF Exposure Prediction

The following equations established by the FCC, in conjunction with the site data, were used to determine the levels of RF electromagnetic energy present in the vicinity of the proposed facility<sup>1</sup>:

$$PowerDensity = \frac{0.64 * N * EIRP(\theta)}{\pi * R^2} (mW/cm^2)$$
 Eq. 1-Far-field

Where, N= Number of channels, R= distance in cm from the RC (Radiation Center) of antenna, and  $EIRP(\theta) =$  The isotropic power expressed in milliwatts in the direction of prediction point. This is the correct equation for antennas which have their gain expressed in dBi, which is the usual case for the PCS bands.

$$PowerDensity = \frac{P_{in} / ch * N * 10^{3}}{2 * \pi * R * h * \alpha / 360} (mW/cm^{2})$$
 Eq. 2-Near-field

Where  $P_{in}/ch$  = Input power to antenna terminals in watts/ch, R = distance to center of radiation, h = aperture height in meters,  $\alpha$  = 3 dB beam-width of horizontal pattern.

 $<sup>^{1}</sup>$  RF exposure is measured and predicted in terms of power density in units of milliwatts (mW), a thousandth of a watt, or microwatts ( $\mu$  W), a millionth of a watt, per square centimeter (cm $^{2}$ ). Data comparing predictive analysis with on site measurements has demonstrated that power density can be effectively predicted at given locations in the vicinity of a wireless antenna facility.

#### 4. FCC Guidelines for Evaluating the Environmental Effects of RF Radiation

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 a Second Memorandum Opinion and Order. These new rules represent a consensus of the federal agencies responsible for the protection of public health and the environment, including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Health and Safety (NIOSH), and the Occupational Safety and Health Administration (OSHA).

Under the laws that govern the delivery of wireless communications services in the United States, as amended by the Telecommunications Act of 1996, the FCC has exclusive jurisdiction over RF emissions from personal wireless antenna facilities, which include cellular, PCS, messaging and aviation sites. <sup>2</sup> Pursuant to its authority under federal law, the FCC has established rules to regulate the safety of emissions from these facilities.

#### 5. Comparison with Standards

Exhibit A shows the levels of RF electromagnetic energy as one moves away from the antenna facility. As shown in Exhibit A, the maximum power density is 0.000908 mW/cm² which occurs at 900 feet from the antenna facility. The chart in exhibit A also shows that the power density is only 0.000030 mW/cm² at a distance of 4 feet. Table 1 below shows the Maximum Permissible Exposure (MPE) limits established by the FCC. There are different MPE limits for public/uncontrolled and occupational/controlled environments.

Table 1: Maximum Permissible Exposure limits for RF radiation

Frequency	Public/Uncontrolled	Occupational/controlled	Maximum power density at Accessible location
Cellular	.580 mW/cm <sup>2</sup>	2.9 mW/cm <sup>2</sup>	0.000908 mW/cm <sup>2</sup>
PCS	1 mW/cm <sup>2</sup>	5 mW/cm <sup>2</sup>	

The maximum power density at the proposed facility represents only 0.15% of the public MPE limit for PCS frequencies.

#### 6. Conclusion

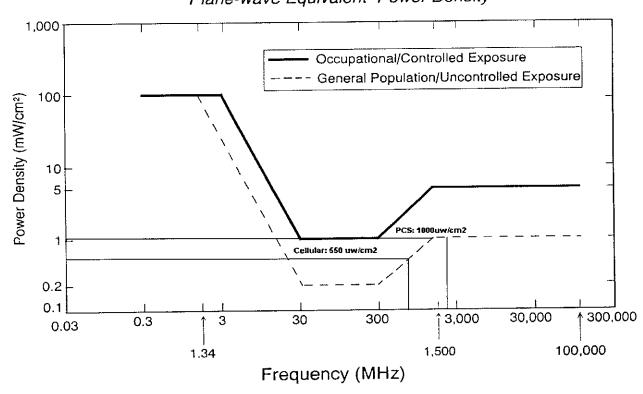
This analysis show that the maximum power density in accessible areas at this location is 0.000908 mW/cm<sup>2</sup>, a level of RF energy that is well below the Maximum Permissible Exposure limit established by the FCC.

<sup>&</sup>lt;sup>2</sup> 47 U.S. C. Section 332 (c) (7)(B)(iv) states that "[n]o State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."

#### 7. FCC Limits for Maximum Permissible Exposure

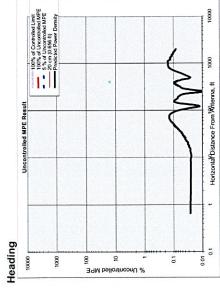
FCC Limits for Maximum Permissible Exposure (MPE)

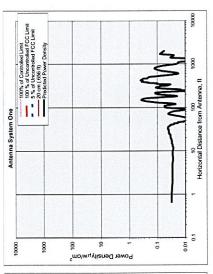
Plane-wave Equivalent Power Density

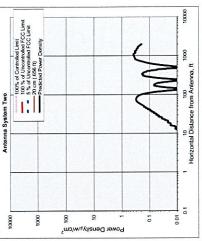


AT&T Wireless Services, Inc.

8. Exhibit A







# Antenna System One

	nits	Value
Frequency	MHz	1945.00
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	5.60
(Center of Radiator)	feet	130.00
Calculation Point	feet	00.00
(above ground or		00.00
roof surface)		00.00
Antenna Model No.		Allgon 7250.02
Max Ant Gain	dBd	16.50
Down tilt	degrees	00'0
Miscellaneous Att.	dB	00.00
Height of aperture	feet	5.11
Ant HBW	degrees	65.00
Distance to Antbottom	feet	127.45
WOS	Y/N?	-

### Ant System ONE Owner: AT&T Sector: 3 Azimuth: 0/120/240

## Antenna System Two

Frequency	MHz	860.00
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	20.79
(Center of Radiator)	feet	160.00
Calculation Point	feet	00.00
(above ground or		00.00
roof surface)		000
Antenna Model No.		Aligon 7120.16
Max Ant Gain	dBd	10.80
Down tilt	degrees	00.00
Miscellaneous Att.	dВ	0.00
Height of aperture	feet	4.30
Ant HBW	degrees	110.00
Distance to Antbottom	feet	157.85
WOS	Y/N?	u

Nextel	3	0/120/240
Ant System TWO Owner: h	Sector:	Azimuth

# Number of Antenna Systems: 4 Meets FCC Controlled Limits for The Antennas Systems.

Meets FCC Uncontrolled Limits for The Antenna Systems.

# Meets 5% of FCC Uncontrolled Limits for The Antenna Systems.

No Further Maximum Permissible Exposure (MPE) Analysis Required.

	Powe	Power Density	@Horiz. Dist.
	mW/cm²	% of limit	feet
Maximum Power Density = 0.0009077541	0.0009077541	0.15	900.00
647.95 times lower than the MPE limit for uncontrolled environment	or uncontrolled e	nvironment	
Composite Power (ERP) =	14,750.00	Watts	

Site ID:	Site ID: 907-009-707	Perform
Site Name: Hampton	Hampton	
Olto Londing	Otto Location: 406 Eleb Dd Hampton CT 06247	

100 % of Uncontrolled Limit

100 % of Uncontrolled FCC Limit

5 % of Uncontrolled FCC Limit

70 cm (656 III)

Predicted Power Donsity

# Antenna System Three

Horizontal Distance from Antenna, ft

Antenna System Four

	units	Value
Frequency	MHz	1960.00
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Walts	7.73
(Center of Radiator)	leel	150.00
Calculation Point	feet	00.00
(above ground or		0.00
roof surface)		00:00
Antenna Model No.		DB980H90
Max Ant Gain	dBd	15.10
Down tilt	degrees	0.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	5.00
Ant HBW	degrees	00.06
Distance to Antbottom	feet	147.50
WOS?	Y/N?	u

### Ant System Three Owner: Sprint Sector: 3 Azimuth 0/120/240

	nuits	Value
Frequency	MHz	00'068
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	18.53
(Center of Radiator)	feet	142.00
Calculation Point	feet	00:00
(above ground or		00:0
roof surface)		00:0
Antenna Model No.		ALP9212
Max Ant Gain	dBd	11,30
Down tilt	degrees	00:00
Miscellaneous Att.	qB	00:00
Height of aperture	feet	4.00
Ant HBW	degrees	95.00
Distance to Antbottom	feet	140.00
WOS?	Y/N?	u

Ant System Four Owner: Verizon Sector: 3 Azimuth: 0/120/240

5/16/2002

#### 9. For Further Information

Additional information about the environmental impact of RF energy from personal wireless antenna facilities can be obtained from the Federal Communications Commission:

Dr. Robert Cleveland Federal Communications Commission Office of Engineering and Technology Washington, DC 20554

RF Safety Program: 202-418-2464 Internet address: rfsafety@fcc.gov

RF Safety Web Site: www.fcc.gov/oet/rfsafety

#### 10. References

- [1] The Communications Act of 1934, as amended by the Telecommunications Act of 1996, 47 U.S.C. Section 332 (c)(7)(B)(iv).
- [2] Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation, Notice of Proposed Rulemaking, ET Docket 93-62, 8 FCC Rcd 2849 (1993).
- [3] Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation, Report and Order, ET Docket 93-62, FCC 96-326, adopted August 1, 1996. 61 Federal Register 41006 (1996).
- [4] Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation, Second Memorandum Opinion and Order, ET Docket 93-62, adopted August 25, 1997.
- [5] Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields, OET Bulletin 65, August, 1997.