



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

November 16, 2000

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

J. Brendan Sharkey, Esq.
VoiceStream Wireless Corporation
100 Filley Street
Bloomfield, CT 06002

RE: **TS-VOICESTREAM-148-001031** - VoiceStream Wireless Corporation request for an order to approve tower sharing at an existing telecommunications facility located at 90 North Plains Industrial Road, Wallingford, Connecticut.

Dear Attorney Sharkey:

At a public meeting held November 14, 2000, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. 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. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letter dated October 31, 2000.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/laf

- c: Honorable William W. Dickinson, Jr., Mayor, Town of Wallingford
- Ms. Linda Bush, Town Planner, Town of Wallingford
- Eric Rabon, SpectraSite Communications
- Ronald C. Clark, Nextel Communications
- Christopher B. Fisher, Esq., Cuddy & Feder & Worby LLP
- Christine Belvin, LCC International, Inc.

RECEIVED
OCT 31 2000



100 Filley Street, Bloomfield, CT 06002
(860) 692-7154 phone
(860) 692-7159 fax

CONNECTICUT
SITING COUNCIL

31 October, 2000

Mortimer A. Gelston, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

TS-VOICESTREAM-148-001031

**Re: Request by VoiceStream Communications, Inc.
for an Order to Approve the Shared Use of a Tower Facility
90 North Plains Industrial Road, Wallingford, Connecticut**

Dear Chairman Gelston and Members of the Council:

Pursuant to Connecticut General Statutes §16-50aa, VoiceStream Wireless Corporation ("VoiceStream") hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use of an existing monopole tower located at 90 North Plains Industrial Road in Wallingford, Connecticut. The tower is owned and operated by SpectraSite Communications ("SpectraSite"). VoiceStream proposes to install antennas on the existing tower located within SpectraSite's leased compound area, and to install related equipment near the base of the tower within the existing compound (see "Exhibit A"). VoiceStream requests that the Council find that the proposed shared use of the tower satisfies the criteria stated in §16-50aa and issue an order approving the proposed use.

Background

VoiceStream is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telecommunications service in the State of Connecticut, which includes the area to be served by the proposed installation.

The SpectraSite tower at 90 North Plains Industrial Road in Wallingford was approved by the Wallingford Planning and Zoning Commission and is a 180-foot monopole located within an existing fenced compound. The coordinates for this location are 41-28-51 N and 72-49-04 W. Nextel Communications ("Nextel") currently has its antennas installed with centerlines at 181 feet above ground level ("AGL"), and AT&T Wireless ("AT&T") has antennas with centerlines at 160 feet AGL. XM Satellite Radio ("XM") has recently applied to the Council for approval of an antenna at 171 feet AGL. VoiceStream and SpectraSite have agreed to mutually acceptable terms and conditions for the proposed shared use of this tower, and SpectraSite has authorized VoiceStream to act on its behalf to apply for all necessary local, state and federal permits and approvals that may be required for the proposed shared use of this facility.

As shown on the site plan drawings and tower elevations attached as Exhibit A, VoiceStream proposes to install a total of six (6) antennas, two per sector, with centerlines at 148 feet AGL. The antennas are EMS RR90-1702 DP. The radio transmission equipment associated with these antennas, a Nortel S8000 cabinet, would be mounted on a concrete slab at the base of the pole.

90 North Plains Industrial Road, Wallingford

Page 2

C.G.S. §16-50aa (c) (1) provides that, upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." The shared use of the tower satisfies those criteria as follows:

A. Technical Feasibility - The existing tower was designed to accommodate multiple carriers, and VoiceStream is the third carrier to propose co-location. As the structural analysis attached as Exhibit C indicates, the tower is structurally sound and capable of supporting the proposed antennas. The proposed shared use of this tower therefore is technically feasible.

B. Legal Feasibility - Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the facility on North Plains Industrial Road in Wallingford. (Public Acts 93-268, Section 2; and 94-242, Section 6 (c)). This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. § 16-50x (a) vests exclusive jurisdiction over these facilities in the Council, which shall "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing towers facilities. Under this statutory authority vested in the Council, an order by the Council approving the shared use would permit the applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility - The proposed shared use would have a minimal environmental effect, for the following reasons:

1. The proposed installations would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. In particular, the proposed installations would not increase the height of the existing tower, and would not extend the boundaries of the existing SpectraSite compound area.
2. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.
3. Operation of antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the American National Standards Institute ("ANSI"). The "worst-case" exposure calculated for operation of this facility (i.e., calculated at the base of the tower, which represents the closest publicly accessible point within the broadcast field of the antennas), with the Nextel, AT&T, XM and VoiceStream antennas, would be 1.8597% of the ANSI standard. These calculations are attached as Exhibit D.

90 North Plains Industrial Road, Wallingford

Page 3

4. The proposed installations would not require any water or sanitary facilities, or generate air emissions or discharges to water or sanitary facilities, or generate air emissions or discharges to water bodies. After construction is complete (approximately two weeks), the proposed installations would not generate any traffic other than for periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, and is environmentally feasible.

E. Economic Feasibility - As previously mentioned, VoiceStream has entered into an agreement with SpectraSite to share the use of the existing tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

F. Public Safety Concerns - As stated above, the existing tower is structurally capable of supporting the proposed VoiceStream antennas. The tower stands on a raw land compound on North Plains Industrial Road. The size and location of the tower have also been approved by the Wallingford Planning and Zoning Commission which considered public health and safety in its review. VoiceStream is not aware of any other public safety concerns relative to the proposed sharing of the existing tower. In fact, the provision of new or improved phone service through shared use of the existing tower is expected to enhance the safety and welfare of area residents and travelers.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower facility at 90 North Plains Industrial Road in Wallingford, Connecticut satisfies the criteria stated in C.G.S. §16-50aa, and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of towers in Connecticut. VoiceStream therefore request that the Siting Council issue an order approving the proposed shared use.

Thank you for your consideration of this matter.

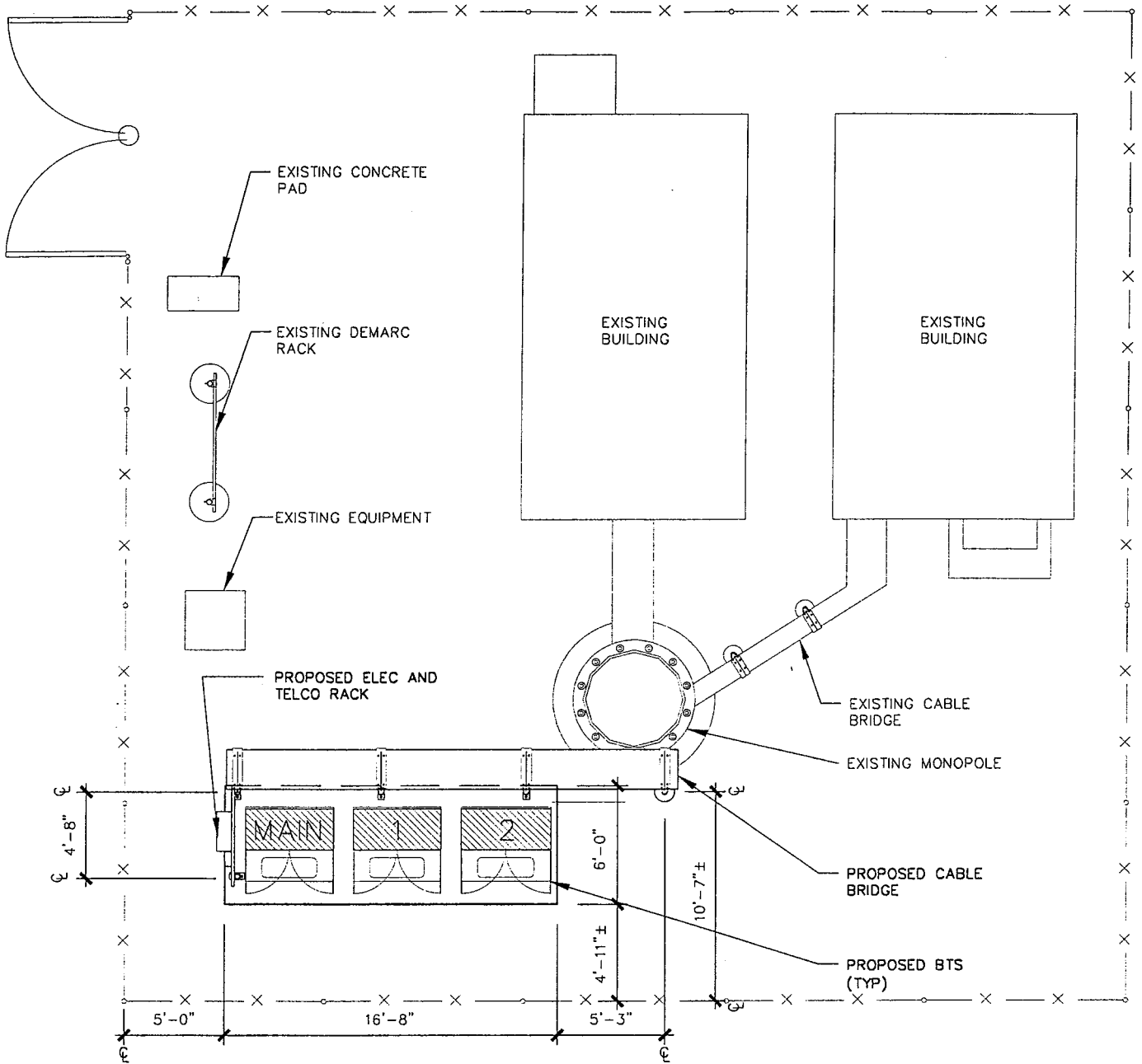
Sincerely,



J. Brendan Sharkey, Esq.
for VoiceStream Communications, Inc.

Attachments

cc: William Dickenson, Mayor of Wallingford



1 COMPOUND PLAN
 LE-1 SCALE: 1/8" = 1'-0"



SITE ID: CT-11-654-A

90 NORTH PLAINS INDUSTRIAL ROAD
 WALLINGFORD, CT 06492

CB JOB NUMBER:

420004

DATE ISSUED:

10/19/00

ISSUES/REVISIONS:

ISSUE FOR REVIEW 10/19/00

Carter :: Burgess

CARTER & BURGESS CONSULTANTS, INC.

481 BUCKLAND ROAD, SUITE 201
 SOUTH WINDSOR, CT 06074

T. 860.648.5819 F. 860.648.5865

LEASE EXHIBITS ARE A CONCEPTUAL REPRESENTATION OF THE LEASE AGREEMENT ONLY—CONSTRUCTION DOCUMENTS MAY VARY FROM THESE EXHIBITS IN ORDER TO COMPLY WITH ALL APPLICABLE CODES

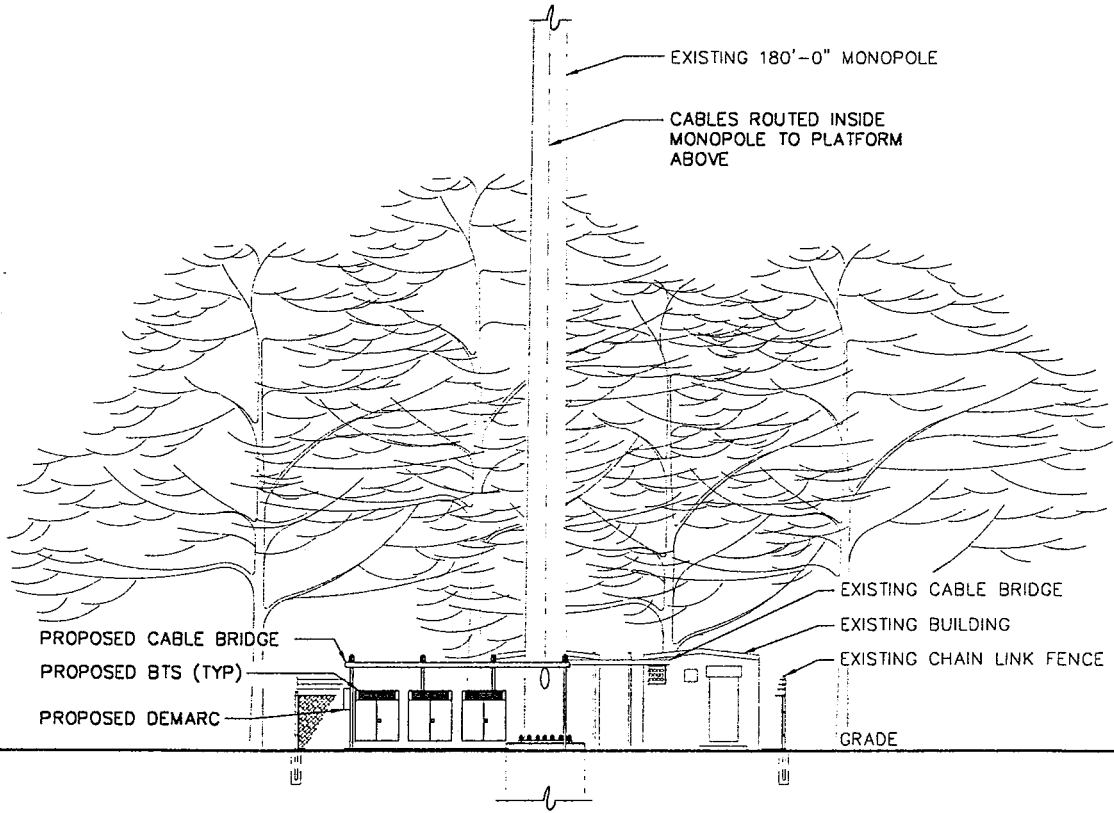
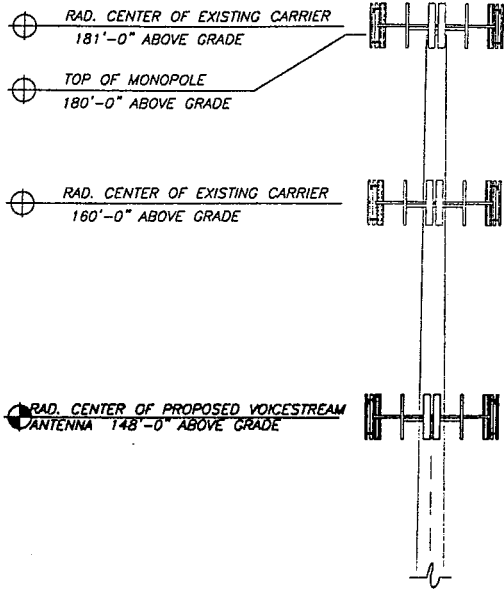
THIS PLAN WAS PREPARED USING AVAILABLE SITE INFORMATION FROM SEVERAL SOURCES, SOME OF WHICH MAY BE UNCONFIRMED, AND REPRESENTS A CONCEPTUAL SITE DEVELOPMENT PLAN BASED ON DEVELOPMENT REQUIREMENTS PROVIDED BY VOICSTREAM WIRELESS

SHEET CONTENTS:

COMPOUND PLAN

SHEET NUMBER:

LE-1



1 COMPOUND PLAN
 LE-1 SCALE: 1/8" = 1'-0"

VoiceStream
 WIRELESS
 SITE ID: CT-11-654-A
 90 NORTH PLAINS INDUSTRIAL ROAD
 WALLINGFORD, CT 06492

CB JOB NUMBER:
 420004
 DATE ISSUED:
 10/19/00
 ISSUES/REVISIONS:
 ISSUE FOR REVIEW 10/19/00

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SHEET CONTENTS:
 ELEVATION
 SHEET NUMBER:
 LE-2

Exhibit A

Design Drawings

**90 North Plains Industrial Road
Wallingford, CT**

Mr. Eric Rabon
SpectraSite Communications, Inc.
100 Regency Forest, Suite 200
Cary, N.C. 27511 *ER*

10/02/00
CT-0003
Bilkays Express

Sub: Structural Analysis of 180 ft. FWT Monopole
90 North Plains Industrial Road, Wallingford, CT 06492

Dear Mr. Rabon:

MHWE has performed a structural analysis of SpectraSite's above noted monopole in accordance with our agreement of December 1, 1999, for the addition of **VoiceStream** proposed antennas outlined below.

The subject monopole is a 180 ft, 18-sided, four section, tapered monopole, designed and manufactured by FWT in 1998. The monopole geometry, section sizes and monopole base design loads were obtained from the manufacturer's drawings for this monopole and are assumed to be accurate (FWT Job No.: 18357, Dated 03/19/98). The monopole has also been assumed to be in good condition and capable of supporting its full design capacity. Existing, future, and proposed loads were provided by your office¹.

Our analysis was performed in accordance with TIA/EIA-222-F for an 85 mph² base windload, and 75% of the base windload with 1/2" radial ice, as specified by SpectraSite. The loading used for our analysis was as follows:

Existing, future, and proposed loads consists of the following:

- at Top Nextel: Nine panel antennas on an existing platform mount, fed by nine 1-5/8"Ø coax cables. The analysis assumes the existing antennas will be replaced by Nine EMS 105-12-00DA panel antennas on the existing platform mount, fed by a total of nine 1-5/8"Ø coax cables assumed to be running inside the pole. Total future equipment not to exceed the **Equivalent flat Plate Area (EPA=CaAa)** that the tower was originally designed to support.³
- at 171 ft XM Radio (Future): One Tilttek TA2355-DAB Omni antenna on a standoff mount, fed by one 1-5/8"Ø coax cable assumed to be running inside the pole.

¹ Kimley-Horn Report CT-0003, Dated: 09/14/00.

² The minimum windspeed specified by EIA-222-F for New Haven County, CT is 85 mph.

³ SpectraSite Tower Inventory Sheet CT-0003, Dated: 08/17/00 (0.79).

- at 160 ft. AT&T: Twelve Allgon 7184 panel antennas on an existing platform mount, fed by twelve 1-5/8"Ø coax cables running inside the monopole.
- at 148 ft. **VoiceStream (proposed)**: Six EMS RR90-17-02DP panel antennas on three T-arm mounts (copy attached), fed by twelve 1-5/8"Ø coax cables assumed to be placed inside the monopole.

Monopole Summary:

This analysis shows that the subject monopole **is adequate** to support the existing, future, and proposed loads.

The full analysis is enclosed. A summary of the controlling load cases are provided below:

<u>Monopole Section</u>	<u>Combined Stress Index⁴</u>
0 ft to 49 ft	0.48
49 ft to 95 ft	0.47
95 ft to 142 ft	0.44
142 ft to 179 ft	0.27

Foundation Summary:

The forces at the base of the monopole are less than the original design loads. The existing monopole base and foundation **is adequate** to support the existing, future, and proposed loads.

<u>Foundation Loads</u>	<u>Original⁵</u>	<u>Existing/Proposed</u>	<u>% of Design</u>
O.T. Moment	5,025 k-ft	3,638.2 k-ft	72%
Axial Load	56.8 k	43.8 k	77%
Base Shear	39.9 k	30.8 k	77%

Other Considerations:

Installation of access ports ("Handholes") for the proposed equipment may be required. The Kimley-Horn and report FWT drawing does not indicate access ports at the proposed elevation of 148 feet. MHW E has designed an access port per your request (see attached). Use extreme caution during the installation of

⁴ Ratio of calculated loads verses total allowable loads; should be less than, or equal to, 1.00

⁵ Original foundation loads were taken from FWT Job No.: 18357, dated 03/19/99.

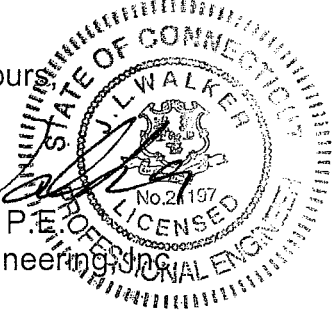
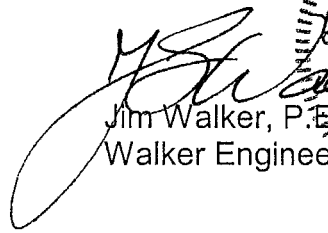
the access ports to insure temporary bracing of the pole, and prevention of fires inside the pole during cutting and welding operations.

As future loads are installed, the monopole should be re-evaluated on a case-by-case basis.

The analysis is based on information provided to this office by SpectraSite Communications, Inc. If the existing conditions are different than the information in this report, MHWE should be contacted for resolution of any issues.

MHWE appreciates the opportunity to be of service in this matter. Please do not hesitate to give me a call if you have any questions or comments.

Very truly yours,



Jim Walker, P.E.
Walker Engineering, Inc.

encl.

Exhibit D

Power Density Calculations **90 North Plains Industrial Road** **Wallingford, CT**

Technical Memo

To: Brendan Sharkey
From: Haider Syed (Radio Engineering Consultant)
cc: Mike Fulton
Subject: Power Density Report for CT11654
Date: 10/31/00

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the proposed VoiceStream Wireless PCS antenna installation on Tower 90 North Plains Rd, Wallingford CT. This study incorporates the most conservative considerations for determining the practical combined worst case power density levels that would be theoretically encountered from several locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from the Voicestream transmitters are in the 1930-1945 MHz frequency band.
- 2) The antenna cluster consists of three sectors, with two antennas per sector. The model number for each antenna is EMS RR90 17 02 DP
- 3) The antenna height is 148 feet centerline.
- 4) The maximum transmit power from each sector is 1826.8 Watts Effective Isotropic Radiated Power (EiRP) assuming four channel capacity.
- 5) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 6) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) The average ground level of the studied area does not significantly change with respect to the transmitting location.

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worse case assumptions, the power density calculations from the proposed VoiceStream Wireless, PCS antenna installation at Tower 90 North Plains Rd, Wallingford CT is 0.018297 mw/cm^2 . This value represents only 1.8297% of the Maximum Permissible Emission (MPE) standard of 1000 microwatts per square centimeter ($\mu\text{w/cm}^2$) set forth in the FCC/ANSI/IEEE C95.1-1991. The combined Power Density with other carriers will be 1.8597 % of the standard. Details are shown in the attachment. Furthermore, the proposed antenna location for VoiceStream Wireless will not interfere with existing public safety telecommunications, AM band and FM band radio broadcast, TV, Police Communication, HAM Radio communications and other signals in the area.

Worst Case Power Density for Antenna installation on Tower at 90 North Plains Industrial Rd, Wallingford CT

Region 11 - Connecticut Power Density Calculation - Worst Case		
Base Station TX output	20 W	43.01
Number of channels	4	
Antenna Model	EMS: RR-90-17/ RV-90-17	
Antenna Gain	16.5 dBi	
Cable Size	1 5/8"	
Cable Length	165 ft	
Jumper & Connector loss	1 dB	
Cable Loss per foot	0.0116	
Total Cable Loss	1.914 dB	
Total Attenuation	2.914 dB	
Total EIRP per channel	56.60 dB	456.70 W
Total EIRP per sector	62.62 dB	1826.80 W
Ground Reflection	1.6	
Frequency	1930 MHz	
Antenna Height	148 ft	4511.04 cm
msg	13.586	
Power Density (S) =	0.018297 mW / cm²	
% MPE =	1.8297%	

% MPE Existing = 0.03 %
 * Additional % MPE contribution Omnipoint = 1.8297 %
 Total % MPE with carriers = 1.8597

Equation Used :

$$S = \frac{(1000)(grf)^2 (Power) * 10^{(1st\ g/10)}}{4\pi (R)^2}$$

Office of Engineering and Technology (OET), Bulletin 65, Edition 97-01, August 1997

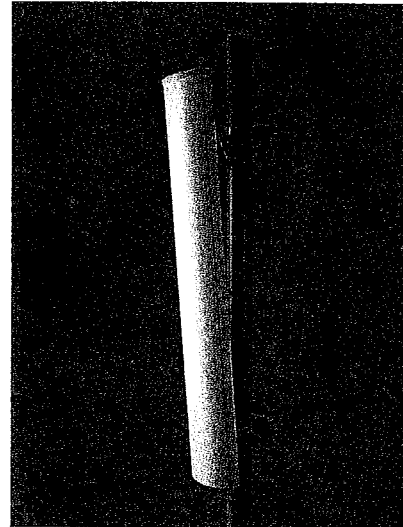
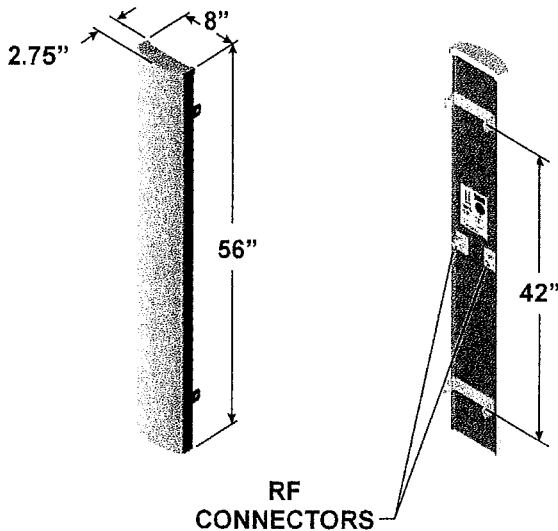
* 0.46 % submitted previously

Exhibit B

Equipment Specifications

**90 North Plains Industrial Road
Wallingford, CT**

1850 MHz - 1990 MHz (P)



90° beamwidth

16.5 dBi gain

±45° DualPol™

56 inch

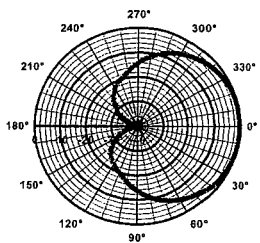
SPECIFICATIONS

Electrical		Mechanical	
Azimuth Beamwidth	90°	Dimensions (L x W x D)	56in x 8in x 2.75in (142 cm x 20.3 cm x 7.0 cm)
Elevation Beamwidth	6°	Rated Wind Velocity	150 mph (241 km/hr)
Gain	16.5 dBi (14.4 dBd)	Equivalent Flat Plate Area	3.1ft ² (.29 m ²)
Polarization	Slant, ±45°	Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Port-to-Port Isolation	≥ 30 dB	Side Wind Load @ 100 mph (161 kph)	31 lbs (139 N)
Front-to-Back Ratio	≥ 25 dB (≥ 30 dB Typ.)	Weight	18 lbs (8.2 kg)
Electrical Downtilt Options	0°, 2°, 4°, 6°	Note: Patent Pending and US Patent number 5, 757, 246. Values and patterns are representative and variations may occur. Specifications may change without notice due to continuous product enhancements. Digitized pattern data is available from the factory or via the web site www.emswireless.com and reflect all updates.	
VSWR	1.35:1 Max		
Connectors	2; Type N or 7-16 DIN (female)		
Power Handling	250 Watts CW		
Passive Intermodulation	<-147 dBc (2 tone @ +43 dBm {20W} ea.)		
Lightning Protection	Chassis Ground		

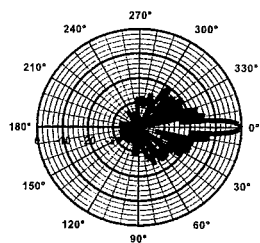
MOUNTING OPTIONS

Model Number	Description	Comments
MTG-P00-10	Standard Mount (Supplied with antenna)	Mounts to Wall or 1.5 inch to 5.0 inch O.D. Pole (3.8 cm to 12.7 cm)
MTG-S02-10	Swivel Mount	Mounting kit providing azimuth adjustment.
MTG-DXX-20*	Mechanical Downtilt Kits	0° - 10° or 0° - 15° Mechanical Downtilt
MTG-CXX-10*	Cluster Mount Kits	3 antennas 120° apart or 2 antennas 180° apart
MTG-C02-10	U-Bolt Cluster Mount Kit	3 antennas 120° apart, 4.5" O.D. pole.
MTG-TXX-10*	Steel Band Mount	Pole diameters 7.5" - 45"

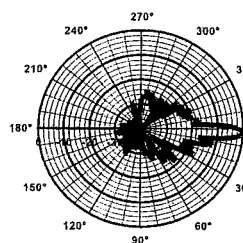
* Model number shown represents a series of products. See mounting options section for specific model number.



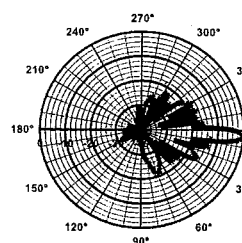
Azimuth



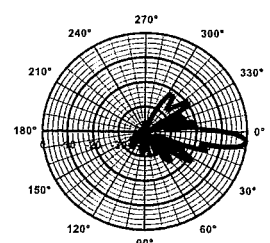
Elevation
0° Downtilt



Elevation
2° Downtilt



Elevation
4° Downtilt

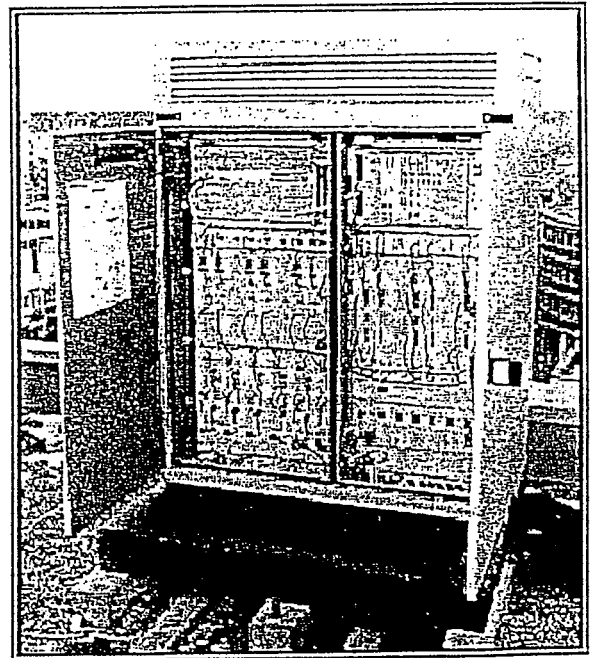
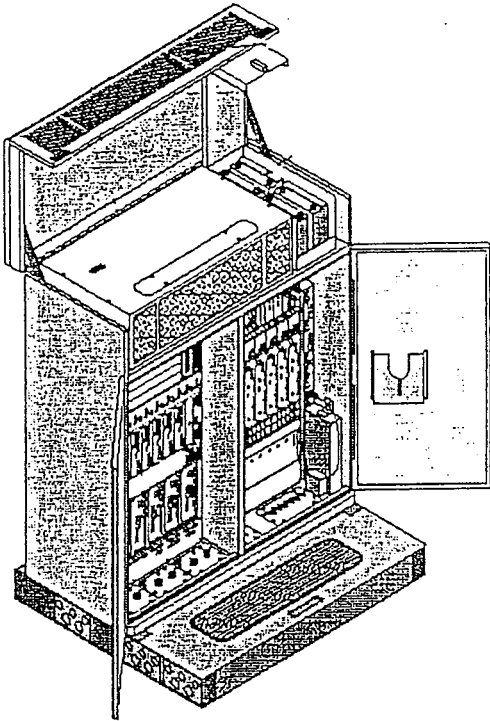


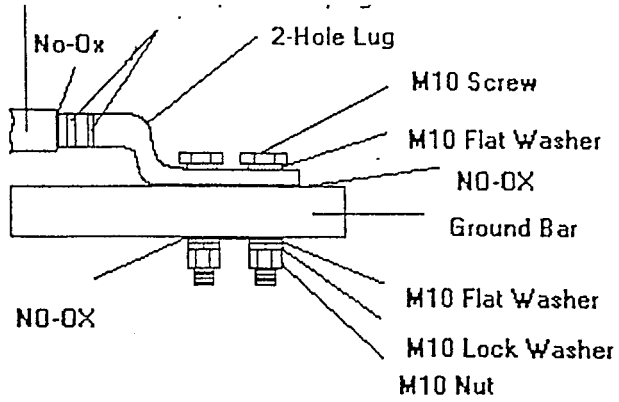
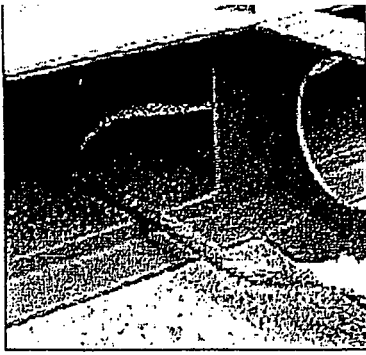
Elevation
6° Downtilt



S8000 BTS

Site Specifications





Apply a light coating of No Oxidation (NO-OX) to the ground bar area.

Dimensions, Weights & Clearances

BTS

Weight: 915 pounds
 Dimensions: 53.2"W x 26"D x 63"H

Clearances while transporting in building:

Door Access:

Height: 6.6 feet
 Width 3 feet

Corridor Access:

Height: 6.6 feet
 Width: 3.6 feet (straight), 6.6 feet (right angle)

Clearances when installed:

Above: 28 inches for opening of hood
 Rear: 8 inches for installation of outer skin
 Sides: 8 inches for adjustment of door hinges
 Front: 54 inches to open door and technician access

Plinth

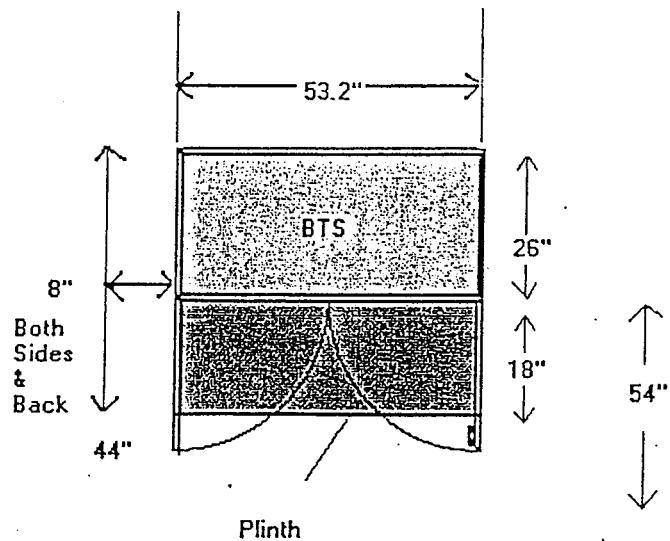
Weight:
 87 pounds

Dimensions:
 53.2"W x 44"D x 10.2"H

Floor Characteristics

Minimum Floor Resistance:
 123 pounds/foot²

Flatness:
 ¼ inch over 78 inches



Electrical Specifications

Split Single-Phase

3 wires plus ground

L1: Black 6 gauge

L2: Red 6 gauge

Neutral: White 6 gauge

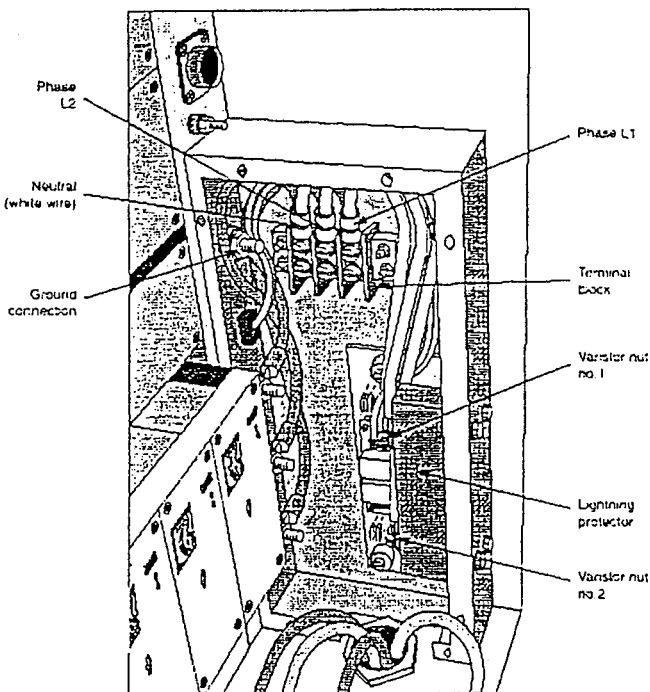
Ground: Yellow/Green 6 gauge

Maximum distance between AC box and BTS: 105 feet

187 ~ 254 VAC between L1 and L2

99 ~ 127 VAC between Neutral and L1 or L2

45 ~ 65 Hertz



AC connection to BTS located at the front, lower, right-hand side of BTS

Circuit Breaker in AC Box

Up to 4 transmitters

30 A, bipolar, C curve

5 or more transmitters

40A, bipolar, C curve

BTS to Ground connection

Minimum 2 AWG, run in most direct route as possible towards true earth, minimizing bends. No bend shall be less than 90 degrees.

Exhibit C

Structural Analysis

**90 North Plains Industrial Road
Wallingford, CT**



100 Filley St., Bloomfield, CT 06002
Phone: (860) 692 - 7129
Fax: (860) 692 - 7159

Technical Memo

To: Brendan Sharkey
From: Halder Syed (Radio Engineering Consultant)
cc: Mike Fulton
Subject: Power Density Report for CT11654
Date: 10/31/00

1. Introduction:

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- 2) The antenna cluster consists of three sectors, with two antennas per sector. The model number for each antenna is EMS RR90 17 02 DP
- 3) The antenna height is 148 feet centerline.
- 4) The maximum transmit power from each sector is 1826.8 Watts Effective Isotropic Radiated Power (EIRP) assuming four channel capacity.
- 5) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 6) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) The average ground level of the studied area does not significantly change with respect to the transmitting location.

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worse case assumptions, the power density calculations from the proposed VoiceStream Wireless, PCS antenna installation at Tower 90 North Plains Rd, Wallingford CT is 0.018297 mw/cm^2 . This value represents only 1.8297% of the Maximum Permissible Emission (MPE) standard of 1000 microwatts per square centimeter ($\mu\text{w/cm}^2$) set forth in the FCC/ANSI/IEEE C95.1-1991. The combined Power Density with other carriers will be 2.9497 % of the standard. Details are shown in the attachment. Furthermore, the proposed antenna location for VoiceStream Wireless will not interfere with existing public safety telecommunications, AM band and FM band radio broadcast, TV, Police Communication, HAM Radio communications and other signals in the area.

Worst Case Power Density for Antenna Installation on Tower at 90 North Plains Industrial Rd, Wallingford CT

TOTAL P.05

Region 11 - Connecticut	
Power Density Calculation - Worst Case	43.01
Base Station TX output	20 W
Number of channels	4
Antenna Model	EMS: RR-90-17/ RV-90-17
Antenna Gain	16.5 dBi
Cable Size	1 5/8"
Cable Length	165 ft
Jumper & Connector loss	1 dB
Cable Loss per Foot	0.0116
Total Cable Loss	1.914 dB
Total Attenuation	2.914 dB
Total EIRP per channel	56.00 dB
Total EIRP per sector	62.62 dB
Ground Reflection	1.6
Frequency	1930 MHz
Antenna Height	145 ft
Loss	3.506
Power Density (S) =	0.018297 mW / cm ²
% MPE =	1.8297%

MPE Excess = 1.12
 Additional MPE contribution Components = 1.837
 Total MPE with carriers = 2.957

Equation Used:

$$S = \frac{(1000(\text{grf})^2(\text{Power}) * 10^{(\text{dB}/10)})}{4\pi (R)^2}$$

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* 0.46 % submitted previously

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*VOICESTREAM WIRELESS