

# 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@po.state.ct.us](mailto:siting.council@po.state.ct.us)

Web Site: [www.state.ct.us/csc/index.htm](http://www.state.ct.us/csc/index.htm)

March 19, 2001

Stephen J. Humes  
LeBoeuf, Lamb, Greene & MacRae  
Goodwin Square  
225 Asylum Street  
Hartford, CT 06103

RE: **TS-VOICESTREAM-077-010228** - VoiceStream Wireless Corporation request for an order to approve tower sharing at an existing telecommunications facility located at 55 Slater Street, Manchester, Connecticut.

Dear Attorney Humes:

At a public meeting held March 15, 2001, 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 with the condition that the equipment cabinets be painted tan, as requested by the Town of Manchester. 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 letters dated February 28, 2001, and March 14, 2001.

Thank you for your attention and cooperation.

Very truly yours,

  
Mortimer A. Gelston  
Chairman

MAG/RKE/laf

- c: Honorable Stephen T. Cassano, Mayor, Town of Manchester
- Mr. Richard J. Sartor, General Manager, Town of Manchester
- Mr. Thomas R. O'Marra, Zoning Enforcement Officer, Town of Manchester
- Julie M. Donaldson, Esq., Hurwitz & Sagarin LLC



# Town of Manchester

41 Center Street • P.O. Box 191  
Manchester, Connecticut 06045-0191  
[www.ci.manchester.ct.us](http://www.ci.manchester.ct.us)

STEPHEN T. CASSANO, MAYOR  
JOSH M. HOWROYD, DEPUTY MAYOR  
JAMES E. MORANCEY, SECRETARY

DIRECTORS  
TIMOTHY H. BECKER  
THOMAS P. CROCKETT  
JOSEPH S. HACHEY  
SUSAN HOVEY  
CHRISTY SCOTT  
LOUIS A. SPADACCINI

RICHARD J. SARTOR, GENERAL MANAGER

March 15, 2001

## Via Facsimile & U. S. Mail

Joel M. Rinebold, Executive Director  
State of Connecticut  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051



Re: TS-VOICESTREAM - 077-010228 - Request for Tower Sharing  
55 Slater Street, Manchester, Connecticut

Dear Mr. Rinebold:

I apologize for the lateness of this response to your notices sent to the Honorable Stephen T. Cassano, Mayor of the Town of Manchester, but I was out of the office until the morning of the meeting of the Siting Council scheduled for Thursday, March 15, 2001.

The subject application is for permission to co-locate on a site of a monopole tower approved by the Manchester Planning and Zoning Commission on August 17, 1998. At that time it was anticipated that co-location would occur. In reviewing the documents attached to your transmission to the Mayor, it appears that the use of the facility as proposed in item 16 of the agenda for today's meeting is in accordance with the plans approved by the Planning and Zoning Commission with one exception.

At the time of the Planning Commission approval it was required that the color of all the equipment cabinets be "tan".

We would respectfully request that if the Siting Council finds the application of VoiceStream Communications to be in order that it require that their equipment cabinets also be tan.

If I may be of any further assistance please do not hesitate to get in touch with me at 860-647-3057.

Very truly yours,

Thomas R. O'Marra  
Zoning Enforcement Officer

TRO'M:ka

cc: Diane W. Whitney, LeBoeuf, Lamb, Greene & MacRae (facsimile & U S Mail)  
Mark Pellegrini, Director of Planning and Economic Development  
Michael Rose, Acting Chief Building Inspector

U:\TROM\Siting Council.wpd

*An Equal Opportunity Employer*



GOODWIN SQUARE  
225 ASYLUM STREET  
HARTFORD, CT 06103  
TELEPHONE: (860) 293-3500  
FAX: (860) 293-3555

IF ANY TRANSMISSION PROBLEMS: (860) 293-3500

From: Kurt Sheathelm, Paralegal

Date: March 14, 2001

ID#: 6150

Page: 1 of 7

If you have any questions regarding this transmission, please contact:

Kurt at 293-3565

To:	Fax Number	Confirming Telephone Number	Client/Matter Number
Bob Erling Connecticut Siting Council	827-2950	827-2935	07687/153

Comments/Message: **URGENT - PLEASE DELIVER TO MR. ERLING IMMEDIATELY. THANKS.**

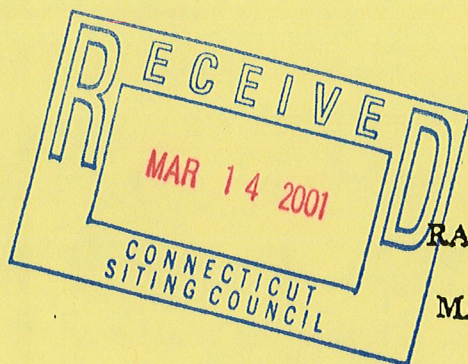
RE: VoiceStream Tower Share Applications

Bob - As stated in my voicemail, here is the additional information on the the Waterbury and Manchester towers. Please call me to discuss. Thanks. Kurt





Figure 1



ENGINEERING EXHIBIT  
HUMAN EXPOSURE TO  
RADIO-FREQUENCY EMISSIONS  
SPRINT PCS  
MANCHESTER, CONNECTICUT

Tabulation of Calculated Exposure Level Six Feet AGL at Monopole Base  
(General Population/Uncontrolled Exposure)

PCS Sector	Number of Transmitters	Effective Radiated Power Per Transmitter (watts)	Operating Frequency (MHz)	Total Effective Radiated Power (watts)	Distance to Target (feet)	Calculated Power Density <sup>a</sup> (mW/cm <sup>2</sup> )	Maximum Permissible Exposure <sup>b</sup> (mW/cm <sup>2</sup> )	Fraction of MPE <sup>c</sup> (%)
North	11	122	1950	1342	154	0.00020	1.0	0.02
Southeast	11	122	1950	1342	154	0.00020	1.0	0.02
Southwest	11	122	1950	1342	154	0.00020	1.0	0.02
Total Exposure								0.06

Abbreviations:

- MHz = megahertz  
mW/cm<sup>2</sup> = milliwatt per square centimeter

<sup>a</sup> Calculated using EPA-recommended ground reflection coefficient of 1.6 and a vertical plane relative field factor of 0.100 (-20 dB).  
<sup>b</sup> MPE was obtained from Section 1.1310 of the FCC Rules.  
<sup>c</sup> The MPE for general population/uncontrolled exposure for the operating frequency indicated was used as a reference.



# Emac Communications Company, Inc.

60 OLIVA STREET, CT 06418 203-738-7733 FAX

203-732-9222

FAX TRANSMITTAL

DATE 31-oct-00

TO: voice stream wireless

ATTENTION: Sherry

FAX NUMBER: 860-692-7159

FROM: Ed MacCarriz

NUMBER OF PAGES SENT (INCLUDING COVER PAGE): 3

MESSAGE: Sherry here is a lot of  
the active transmitters at  
Watersburg with ERP and  
height  
Thanks Ed

HARD COPY TO BE MAILED YES NO

**WARRANTY VOID**



### Waterbury Tower

411 antennas mounted at 290' to base of antenna

#### Skynet

- 0.2436 940.2250 MHz (~~0.2436~~) 469.6 watts ERP ~~9648~~
- 0.2835 931.9375 MHz (~~0.2835~~) 547 watts ERP
- 0.2835 931.4375 MHz (~~0.2835~~) 547 watts ERP

#### BellSouth wireless

- 0.0007 937.2625 MHz (0.1296) 250 watts ERP

#### Arch

- 0.4795 929.8375 MHz (0.4795) 925 watts ERP
- 0.1991 454.450 MHz (0.1991) 384 watts ERP

#### mobile.com

- 0.5184 931.9875 MHz 1000 watts ERP
- 0.5127 931.8875 MHz 989 watts ERP

#### fedex

- 0.1140 858-8625 MHz ~~220~~ 220 watts ERP

0.0143



Summary of Waterbury PageNet Transmitters:

Transmitter	Channel	Licensed ERP	
1	929.2875	1000	Watts
1	929.5625	1000	Watts
1	929.8625	1000	Watts
2	929.6125	1000	Watts
3	929.9625	1000	Watts
4	929.0125	1000	Watts
5	929.5875	3500	Watts
6	931.6875	994	Watts
7	152.210	22.4	Watts
8	929.7375	501	Watts
8	929.7625	1000	Watts
9	931.2875	994	Watts
10	940.0625	3500	Watts

all antennas mounted at 280' to  
Bottom of antenna except # 7 152.210 MHz  
is mounted at 251'



**EASTLAND TITLE SERVICES, INC.**  
P.O. Box 440  
South Windsor, CT. 06074  
Telephone (860) 644-7078 Fax (860) 644-5344

**REPORT OF TITLE**

**ISSUED TO**

Voicestream Wireless

File No.: CT11-392B

ETS No. 00-2190-1

Attention: Mark DeVoe

Property Address: 181 Garden Circle, Waterbury, CT

This is to report that after an examination of the Land Records, as indexed, of the City of Waterbury, State of Connecticut, from 6/3/1885, to August 17, 2000 at 5:00 PM, the records show that EMAC Communications, Inc. aka EMAC Communications Co, Inc., is the owner, except as noted below, of the property described in a warranty deed from Candida Delaurentis dated 6/3/1987 and recorded 6/4/1985 in volume 1776 at page 84 of the Waterbury Land Records and described in a warranty deed from Leslie M. Russell dated and recorded 6/4/1985 in volume 1776 at page 87 of the Waterbury Land Records, copies of such deeds are attached hereto, and that title to said property is free from all encumbrances except the following:

1. Violations of any and all provisions of any ordinances, municipal regulations or public or private law.
2. Any state of facts which an accurate survey or physical inspection of said premises might disclose, but which do not appear of record.
3. Beach rights or other riparian or littoral rights, and any rights in rivers, brooks, streams, lakes, ponds, bays or navigable waters.
4. Errors in the indexing of public records.
5. Inchoate liens not perfected by recording with the Town Clerk.
6. Mechanic's Liens prior to the time that notice of the lien or the lien itself is recorded.
7. The title to land under rights of way appurtenant to the premises unless a special search is directed covering such rights of way and a special fee charged therefor.



After Recording Return to:  
Omnipoint Communications, Inc.  
Attn: Lease Management  
360 Newark-Pompton Turnpike  
Wayne, NJ 07470

Parcel No. Map 184, Lot 50, Block 805

**Memorandum of Lease and Option**  
Between EMAC Communications Co., Inc. having a principle place of business at 50 Olivia Street, Derby, CT 06418  
("Landlord")  
and Omnipoint Communications, Inc., a Delaware corporation, having a principle place of business at 360 Newark-Pompton  
Turnpike, Wayne, NJ 07470 ("Tenant")

A Tower Lease with Option ("Lease") by and between EMAC Communications Co., Inc. ("Landlord") and Omnipoint Communications, Inc. ("Tenant") was made regarding the following property:

See Attached Exhibit "A" incorporated herein for all purposes

The Option is for a term of Twelve (12) month[s] after the Effective Date of the Lease,  
\_\_\_\_\_, \_\_\_\_\_, 200\_\_\_\_, with up to one additional Twelve (12) month renewal ("Optional Period").

The Lease is for a term of five (5) years and will commence on the date as set forth in the Lease (the "Commencement Date") and shall terminate at midnight on the last day of the month in which the th anniversary of the Commencement Date shall have occurred. Tenant shall have the right to extend this Lease for five (5) additional five-year terms.

The purpose of this Memorandum is to give record notice of the Lease and of the rights created thereby, all of which are hereby confirmed and incorporated herein.

NOW, THEREFORE, Landlord, in consideration of the rents and covenants provided for in the Lease to be paid and performed by Tenant, does hereby grant the aforesaid option and, if such option is exercised, does hereby demise, convey, grant and let unto Tenant the Demised Premises upon the terms and subject to the conditions set forth in the Lease, a copy of which is being held by Landlord at its address stated above.

Either party may file of public record a Memorandum of Commencement Date which sets forth the specific Commencement Date and the Initial and Renewal Term[s] of the Lease.

IN WITNESS WHEREOF, the parties hereto have respectively executed this memorandum effective as of the date of the last party to sign.

LANDLORD: EMAC Communications Co., Inc.

By: Edward H. MacCormie

Printed Name: Edward H. MacCormie

Its: PRESIDENT

Date: 27-Jul-00

Witness: Christine A O'Connell Witness: \_\_\_\_\_

~~LANDLORD: <2nd Landlord Name>~~

~~By: \_\_\_\_\_~~

~~Printed Name: \_\_\_\_\_~~

~~Its: \_\_\_\_\_~~

~~Date: \_\_\_\_\_~~

~~Witness: \_\_\_\_\_ Witness: \_\_\_\_\_~~



LEBOEUF, LAMB, GREENE & MACRAE  
L.L.P.

A LIMITED LIABILITY PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

NEW YORK  
WASHINGTON, D.C.  
ALBANY  
BOSTON  
DENVER  
HARRISBURG  
HARTFORD  
HOUSTON  
JACKSONVILLE  
LOS ANGELES  
NEWARK  
PITTSBURGH  
SALT LAKE CITY  
SAN FRANCISCO

GOODWIN SQUARE  
225 ASYLUM STREET  
HARTFORD, CT 06103

(860) 293-3500

FACSIMILE: (860) 293-3555

WRITER'S DIRECT DIAL:  
(860) 293-3744

LONDON  
(A LONDON-BASED  
MULTINATIONAL PARTNERSHIP)

PARIS

BRUSSELS

MOSCOW

RIYADH  
(AFFILIATED OFFICE)

TASHKENT

BISHKEK

ALMATY

BEIJING

February 28, 2001

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

**RECEIVED**

FEB 28 2001

**CONNECTICUT  
SITING COUNCIL**

**Re: Request by VoiceStream Wireless Corp. for an Order  
to Approve the Shared Use of a Tower Facility  
55 Slater Street, Manchester Connecticut**

Dear Chairman Gelston and Members of the Council:

Please be advised that LeBoeuf, Lamb, Greene & MacRae, L.L.P. represents VoiceStream Wireless Corporation ("VoiceStream") in the above-referenced matter. Pursuant to Connecticut General Statutes §16-50aa, VoiceStream hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use by the applicant of an existing tower located at 55 Slater Street in Manchester, Connecticut (Slater Street Industrial Park). VoiceStream proposes to install antennas on the existing tower, and the equipment associated with this facility would be located 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**

In February 2000, VoiceStream acquired from Omnipoint Communications, Inc. the "A block" "Wideband PCS" license for the 2-GHz PCS frequencies for the greater New York City area, including the entire State of Connecticut. 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 tower at 55 Slater Street in Manchester is a 155-foot Sprint PCS monopole tower. The coordinates for the site are 41°-48'-18" N and 72°-32'-01" W. The tower currently holds 6 Sprint PCS panel antennas on a low profile platform with centerlines at 153 feet above ground level ("AGL"), the top level of the tower. VoiceStream and the owner have agreed to mutually acceptable terms and conditions for the proposed



shared use of this tower, and the owner has authorized VoiceStream to act on its behalf to apply for all necessary local, state and federal permits, approvals and authorizations which may be required for the proposed shared use of this facility.

VoiceStream proposes to install an antenna cluster comprised of three sectors, with 4 antennas per sector. The model numbers for the Alpha and Beta sectors are Algon 7250 and the Gamma Sector is EMS RR90-17-02 DP. The proposed antennas have centerlines at the 133-foot elevation. A carrier at the 143 level has yet to be determined. The radio transmission equipment associated with these antennas, a Nortel S8000 cabinet, would be located near the base of the tower on an existing concrete pad. Exhibit B contains specifications for the proposed antennas and equipment cabinet.

C.G.S. §16-50aa (c) (1) provides in pertinent part 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 second carrier to propose co-location. A structural analysis of the tower with the proposed VoiceStream installation has been performed and is attached as Exhibit C. 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 at 55 Slater Street in Manchester. 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 minimal environmental effects, if any, for the following reasons:

1. The proposed installations (i.e., three sectors with 4 antennas per sector) 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 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 Sprint and VoiceStream antennas, would be 4.057 % of the ANSI standard. These calculations are attached as Exhibit D.

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 periodic maintenance visits.

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

**D. Economic Feasibility** As previously mentioned, the owner and VoiceStream have entered into a mutual agreement to share the use of the existing tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

**E. Public Safety Concerns** As stated above, the existing tower is structurally capable of supporting the proposed VoiceStream antennas. The tower stands on a compound accessible from Slater Street. 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 will enhance the safety and welfare of area residents.

### **Conclusion**

For the reasons discussed above, the proposed shared use of the existing tower facility at 55 Slater Road in Manchester, 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 respectfully requests that the Council issue an order approving the proposed shared use of this tower.

Thank you for your consideration of this matter.

Respectfully submitted,

VOICESTREAM WIRELESS CORPORATION

By: \_\_\_\_\_

Its Counsel

Stephen J. Humes

Diane W. Whitney

Attachments

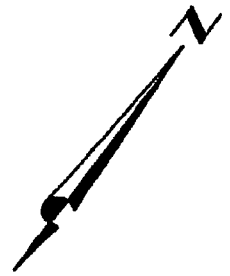
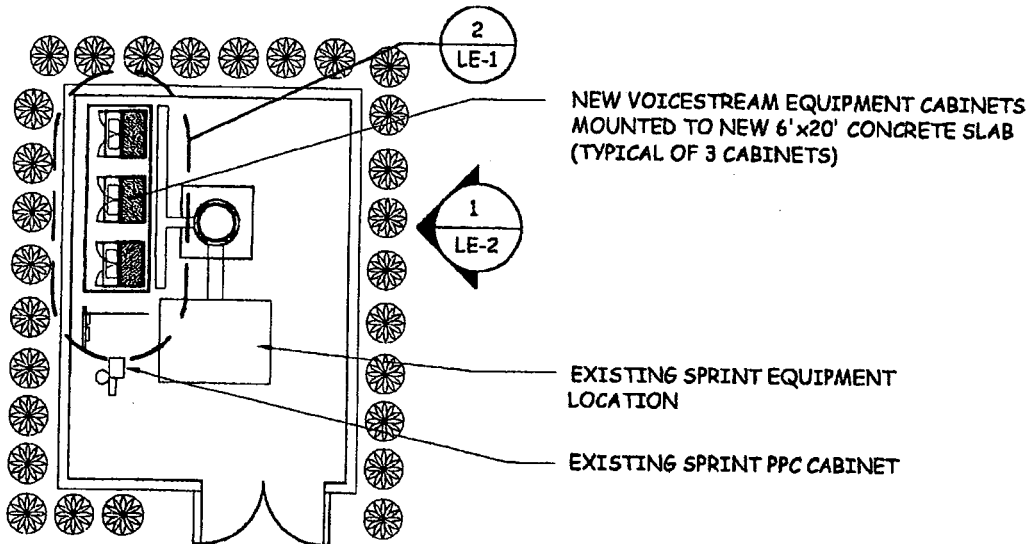
cc: Richard J. Sartor, General Manager of Board of Directors, Town of Manchester



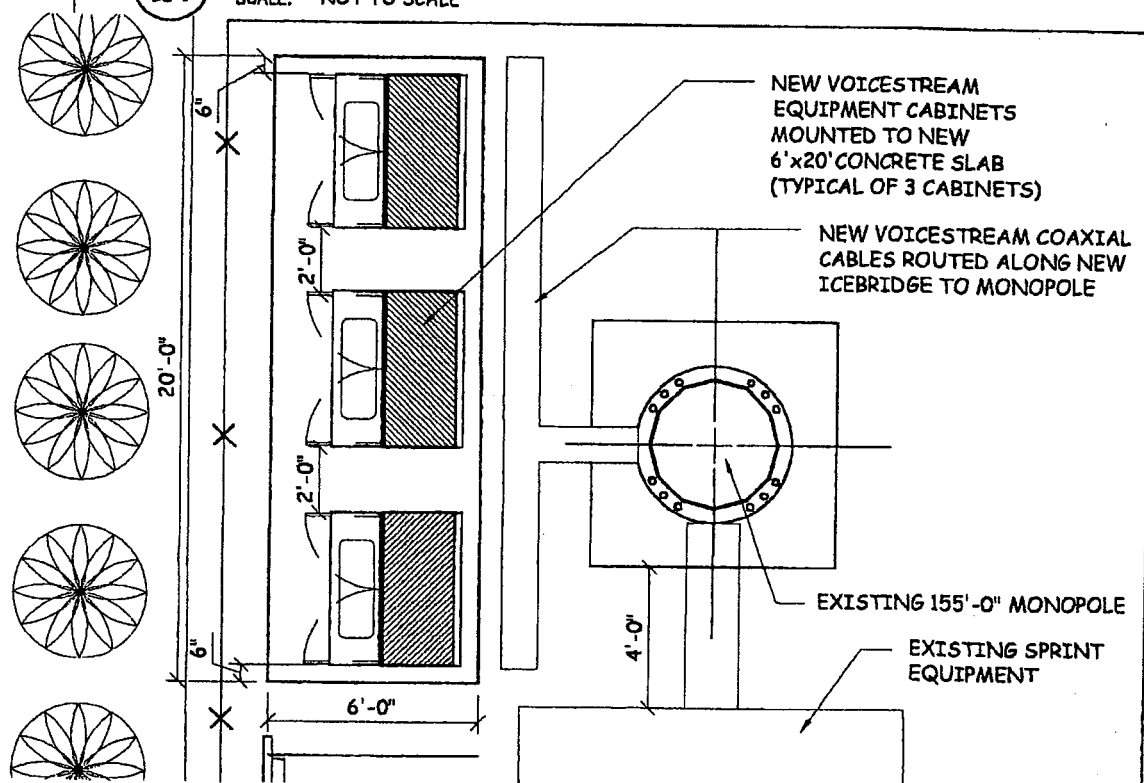
**Exhibit A**

**Design Drawings**  
**55 Slater Street, Manchester, CT**





1 SITE LAYOUT  
SCALE: NOT TO SCALE

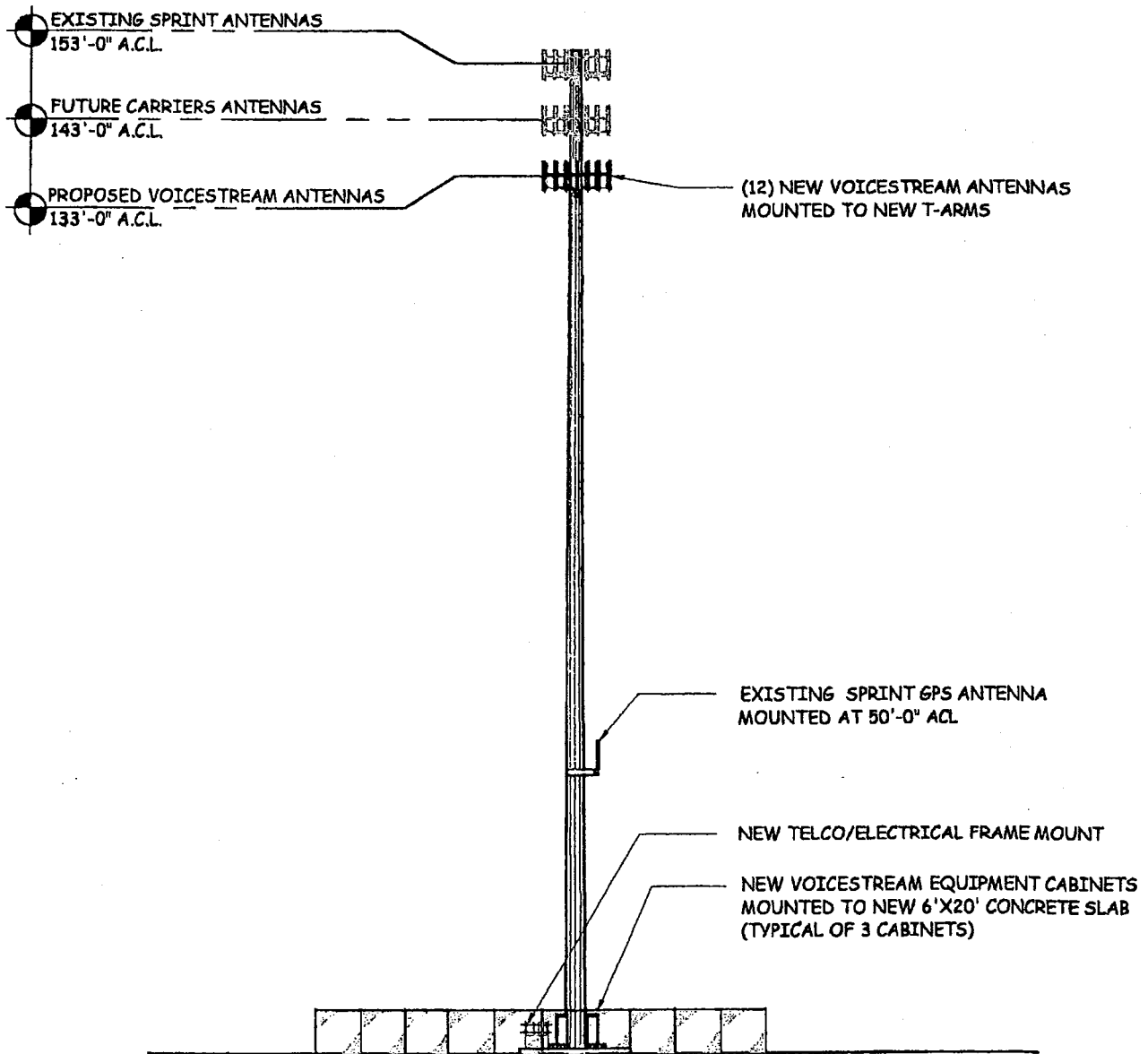


2 EQUIPMENT LAYOUT  
SCALE: 3/16" = 1'-0"

NOTE: EXHIBITS SUBMITTED ARE A CONCEPTUAL REPRESENTATION OF THE LEASE AGREEMENT ONLY. ACTUAL CONSTRUCTION DOCUMENTATION MAY VARY TO COMPLY WITH ALL APPLICABLE CODES.

Approved By: RF ENGINEER: _____ DATE: _____	Client:	Project: SLATER STREET INDUSTRIAL PARK
Approved By: CONST MNGR: _____ DATE: _____	 <small>100 PRUDY STREET, MANCHESTER, CT 06027</small>	Address: 53 -73 SLATER ROAD MANCHESTER, CT
Approved By: S.A.C.: _____ DATE: _____		Project No.: CT-11-377A Search Area: MANCHESTER
ON AIR ENGINEERING 201 WALNUT STREET, WASHINGTON TOWNSHIP, NJ 07675	P.M.: DWe Drawn: RSa Chkd. by: _____ Date: 12/15/00	Drawing Title: SITE LAYOUT Drawing No.: LE-1





NOTE: EXHIBITS SUBMITTED ARE A CONCEPTUAL REPRESENTATION OF THE LEASE AGREEMENT ONLY. ACTUAL CONSTRUCTION DOCUMENTATION MAY VARY TO COMPLY WITH ALL APPLICABLE CODES.

**2** ELEVATION  
LE-2 SCALE: 1"=30'-0"

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
**RF ENGINEER:** \_\_\_\_\_  
 Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
**CONST MNGR:** \_\_\_\_\_  
 Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
**S.A.C. :** \_\_\_\_\_

Client:

100 WALNUT STREET, WASHINGTON TOWNSHIP, NJ 07075

Project: **SLATER STREET INDUSTRIAL PARK**  
 Address: 53-73 SLATER ROAD  
 MANCHESTER, CT  
 Project No.: **CT-11-377A** Search Area: **MANCHESTER**

**ON AIR ENGINEERING**  
 201 WALNUT STREET, WASHINGTON TOWNSHIP, NJ 07075

P.M.: **DWe** Drawn: **RSa** Dtd. by: \_\_\_\_\_ Date: **12/15/00**

Drawing Title: **ELEVATION** Drawing No. **LE-2**



# **Exhibit B**

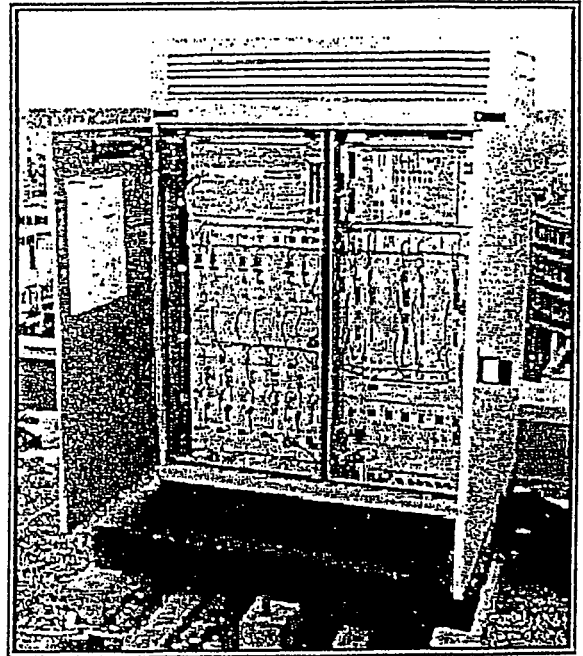
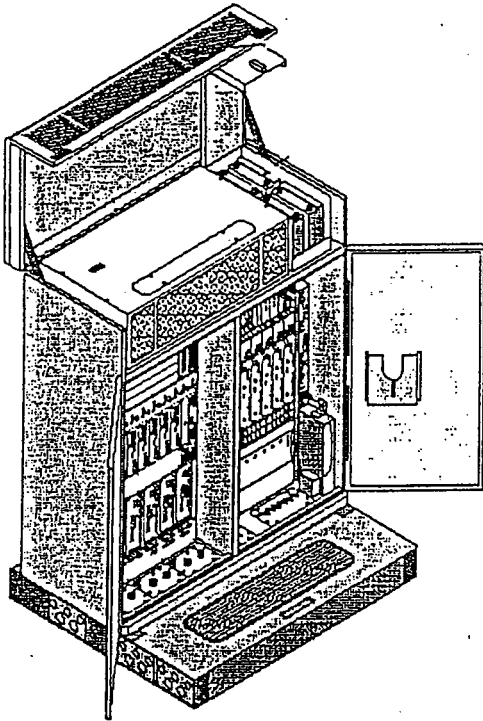
**Equipment Specifications**  
**55 Slater Street, Manchester, CT**



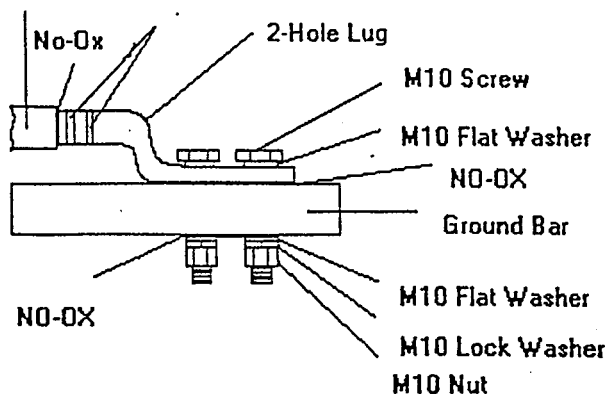
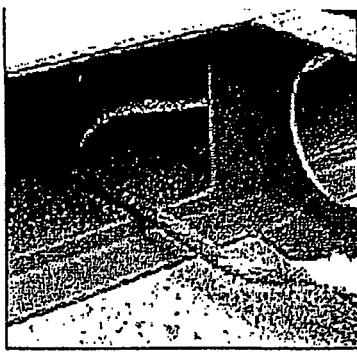
**NORTEL**  
NETWORKS™

# 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

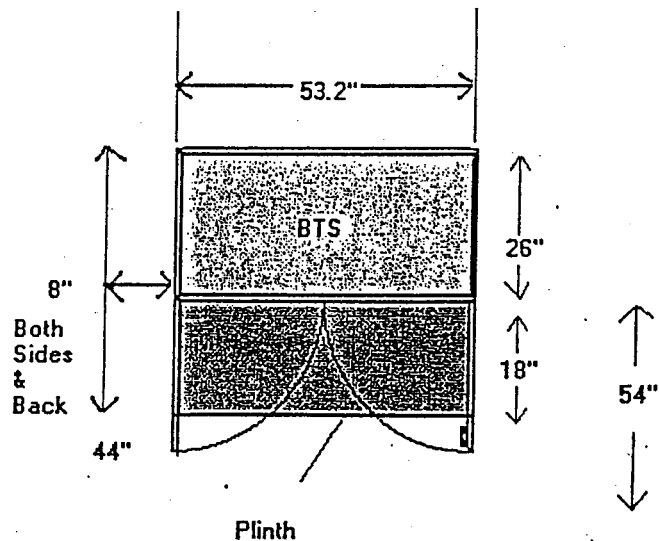
Weight:  
 87 pounds

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

## Floor Characteristics

Minimum Floor Resistance:  
 123 pounds/foot<sup>2</sup>

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

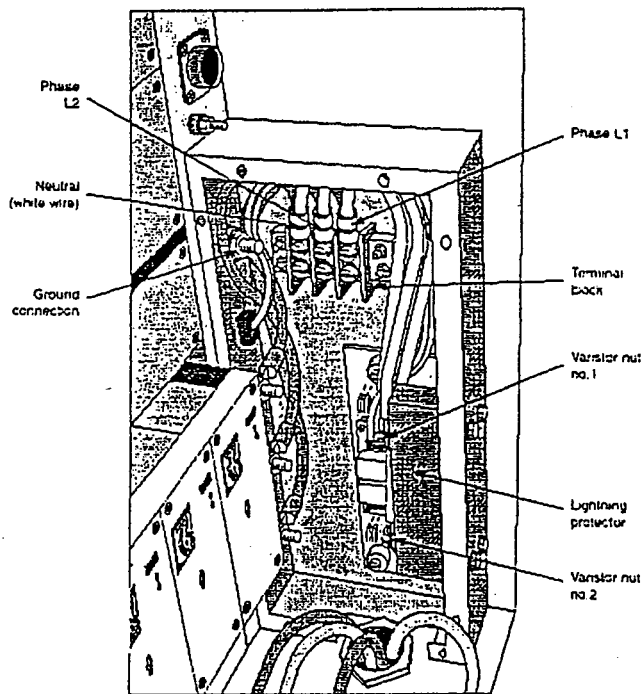
Ground: Yellow/Green 6 gauge

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

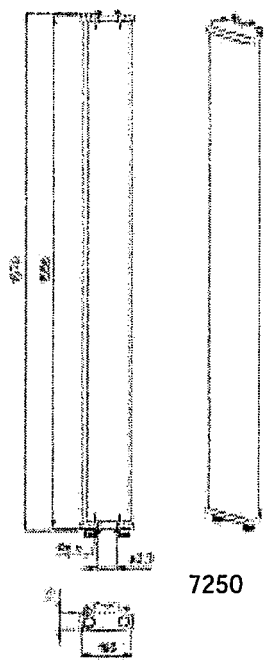
Minimum 2 AWG, run in most direct route as possible towards true earth, minimizing bends. No bend shall be less than 90 degrees.



**PCS Dual Polarized 65°**

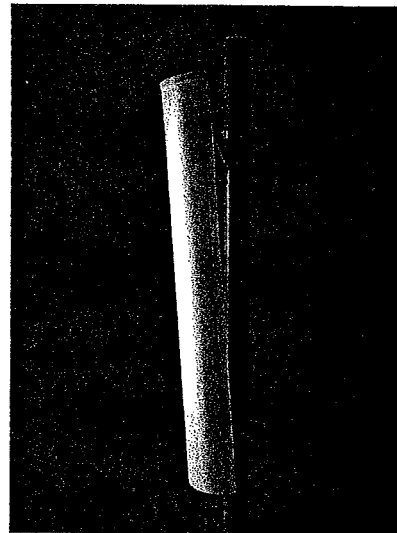
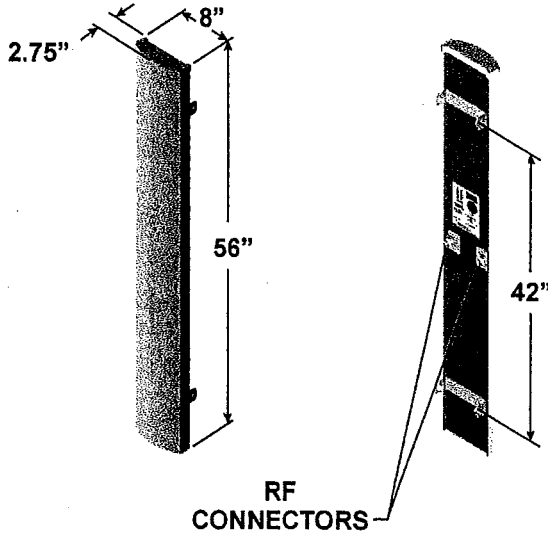
Electrical Specifications	7250.03 (+45,-45 )
Polarization	linear dual polarized, slanted $\pm 45^\circ$
Co-polar gain dBd (dBi)	16.5 (18.5)
Isolation between inputs	>30 dB
Cross polar discrimination	>20 dB
Horizontal -3dB beamwidth	65°
Vertical -3dB beamwidth	5.5
Front-to-back ratio, total power	>20 dB
Front to back ratio, co-polar	>23 dB
Electrical Downtilt	2°
Nominal Impedance	50 ohm
VSWR	<1.3:1
Maximum input power	250W
Intermodulation products(2Tx@10 W)	<-110 dBm
First null below the horizon	>-23 dB
First upper side lobe suppression	>19 dB

Mechanical Specifications	7250.03
Connector	N, 7/16
Position	Lower
Height	60.6" (1.54m)
Width	6.5" (.165m)
Depth	2" (.05m)
Weight	15.4 lb (7kg)
wind speed	156 mph (70m/s)
Wind load, frontal @90mph(41.6m/s)	58 lbf. (259N)





**1850 MHz - 1990 MHz (P)**



- 90° beamwidth
- 16.5 dBi gain
- ±45° DualPol™
- 56 inch

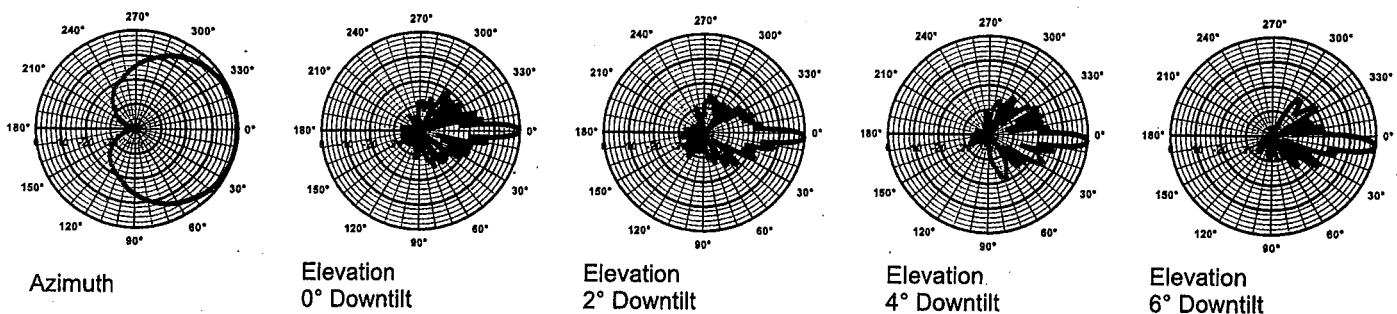
## SPECIFICATIONS

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 <sup>2</sup> (.29 m <sup>2</sup> )
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 <a href="http://www.emswireless.com">www.emswireless.com</a> 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.





# **Exhibit C**

## **Structural Analysis**

**55 Slater Street, Manchester, CT**

On Air Engineering, LLC

201 Walnut Street  
Township of Washington, NJ 07676  
(201) 358-9541  
(201) 358-9542 fax

January 26, 2001

Mr. Brendan Sharkey  
VoiceStream Wireless  
100 Filley Street  
Bloomfield, CT 06002

Re: CT-11-377-A  
53-73 Slater Rd, Manchester, CT  
Existing 155 foot Sprint PCS Monopole

Dear Mr. Sharkey:

Our office has completed a structural assessment and loading conditions for the above referenced Sprint PCS monopole to determine the adequacy of the structure for carrying proposed VoiceStream antennas.

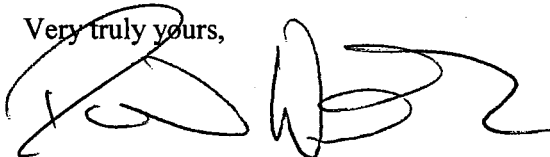
VoiceStream provided our office with Summit Manufacturing Inc. monopole and foundation design drawings dated 9/11/98 prepared by Paul J. Ford and Company. The drawings indicate that the monopole has been designed for 3 carriers and miscellaneous other items for the following antenna loads and centerlines:

- 155'-0" 5/8" Diameter Lightning Rod
- 155'-0" (12) DB980H panel antennas, 14' low profile platform
- 145'-0" (12) Panel antennas (CaAa=3.9 S.F. each), 14' low profile platform
- 135'-0" (12) Panel antennas (CaAa=3.9 S.F. each), 14' low profile platform
- 115'-0" (2) 3" Diameter x 10' whip antennas, (2) 6' clamp stiff arms
- 50'-0" GPS antenna with mount

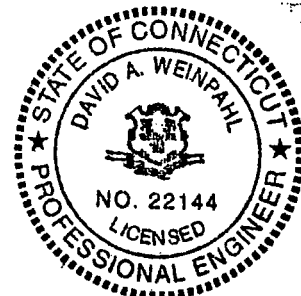
VoiceStream is proposing to install (12) antennas consisting of (8) Allgon model # 7250 and (4) EMS model # RR90-17-02DP on (3) 14' clamp-on T-Arms at the 133'-0" elevation designated for the third carrier. Sprint PCS at the top 153'-0" elevation has (6) existing panel antennas on a low profile platform while the second carrier at 143'-0" has yet to be determined.

Based on the existing Sprint PCS loading and proposed VoiceStream loading in comparison to the overall design loading, this monopole is determined to be structurally adequate at this time. This analysis assumes that the pole and foundation have been installed in accordance with Paul J. Ford and Company design drawings and in compliance with all local and state building codes.

Very truly yours,



David A. Weinpahl, P.E.  
President  
On Air Engineering, LLC





# **Exhibit D**

## **Power Density Calculations** **55 Slater Street, Manchester, CT**



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

## Technical Memo

To: Brendan Sharkey  
From: Bill Long ( RF Engineering Consultant )  
cc: Mike Fulton  
Subject: Power Density Report for CT11377C  
Date: 02/01/01

### 1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the proposed VoiceStream Wireless installation on tower at 55 Slater Street, Manchester, 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 OCI transmitters are in the 1930-1945 MHz frequency band.
- 2) The antenna cluster consists of three sectors, with up to four antennas per sector. The model number for Alpha and Beta Sectors are Allgon 7250.02 and the Gamma Sector is EMS RR901702 DP.
- 3) The antenna height is 133 feet centerline.
- 4) The maximum transmit power from each sector is 3223.08 Watts Effective Isotropic Radiated Power (EiRP) assuming eight 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 tower is  $0.03997499 \text{ mw/cm}^2$ . This value represents only 3.9975 % 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 MPE with Sprint equipment will be 4.0575 %.

Details are shown in the attachment. Furthermore, the proposed VoiceStream Wireless installation on tower at 55 Slater Street Manchester, CT, 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 proposed tower @ at 55 Slater Street Manchester. Ct.

Region 11 - Connecticut			
Power Density Calculation - Worst Case			
Base Station TX output	12 W		40.78
Number of channels	8		
Antenna Model	Alligon 7250.02		
Antenna Gain	18.5 dBi		
Cable Size	1 5/8"		
Cable Length	150 ft		
Jumper & Connector loss	1.5 dB		
Cable Loss per foot	0.0116		
Total Cable Loss	1.74 dB		
Total Attenuation	3.24 dB		
Total EIRP per channel	56.05 dB	402.89	W
Total EIRP per sector	65.08 dB	3223.08	W
Ground Reflection	1.6		
Frequency	1930 MHz		
Antenna Height	133 ft	4053.84	cm
nsg	15.26		
Power Density (S) =	0.0399749888866328	mW / cm <sup>2</sup>	
% MPE =	3.9975%		

Sprint MPE% = 0.06  
 Total MPE% = 3.9981

Equation Used:

$$S = \frac{(100Q)(gr)^2 (Power) * 10^{(nsg/10)}}{4\pi (R)^2}$$

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