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
Web Site: www.state.ct.us/csc/index.htm

August 20, 2002

Sandy M. Carter
Verizon Wireless
Network Department
99 East River Drive
East Hartford, CT 06108

RE: **TS-VER-126-020712** - Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 309 River Road, Shelton, Connecticut.

Dear Ms. Carter:

At a public meeting held August 15, 2002, 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 June 20, 2002.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/laf

c: Honorable Mark A. Lauretti, Mayor, City of Shelton
Richard Schultz, Planning Administrator, City of Shelton
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae

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August 19, 2002

The Honorable Mark A. Lauretti
City Hall
54 Hill Street
Shelton, CT 06484

Dear Mayor Lauretti:

Derek Phelps, our Executive Director, has passed along your request for more information about the notices of exempt modifications recently received by the Siting Council for telecommunications facilities in Shelton. In response to your request, I'm sending along copies of the filing materials we received.

If there is any additional information that would be helpful to the City, please don't hesitate to contact Mr. Phelps or myself.

Sincerely,

David Martin
Siting Analyst I

C: S. Derek Phelps

L:\SITING\DavidM\Correspondence\SheltonMayor8-19-02.doc

ROBINSON & COLE LLP

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

August 12, 2002

Via Facsimile and U.S. Mail

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

Re: **TS-VER-126-020712 - Cellco Partnership d/b/a Verizon Wireless**
309 River Road, Shelton, Connecticut

Dear Mr. Phelps:

The above-referenced tower share request was recently filed with the Council. It requests the Council's approval to install antennas inside the existing flagpole tower at 309 River Road in Shelton. At its meeting of August 1, 2002, the Council tabled action on this matter following receipt of a letter from Michael J. Davis, through the Mayor's Office, requesting additional time to review the proposal. Mr. Davis serves on a Cellular Tower Committee in the Town of Shelton. This Committee was to meet on July 30, 2002, to discuss the Verizon Wireless proposal. As discussed in the attached letter, which I received from Mr. Davis, the Cellular Tower Committee did not meet that night and will not meet again until late September, at the earliest. Mr. Davis states in the attached letter that he will ask the Mayor to ask the Siting Council to withhold any decision on the Verizon Wireless tower share request until that time.

On behalf of Verizon Wireless, I must object to Mr. Davis' request for the further delay of the Siting Council action on TS-VER-126-020712. Verizon Wireless has asked the Council to authorize the shared use of an existing flagpole tower originally approved by the Town of Shelton Planning and Zoning Commission. Verizon Wireless antennas will be mounted internally resulting in little or no additional visual effect. Verizon Wireless' equipment will be located near the base of the tower, in an area approved by the Town for equipment location. To the extent the Cellular Tower Committee has any additional comments and concerns, Verizon Wireless will agree to consider them when offered. Further delaying in the Council's decision on this request, however, is unnecessary.

Please feel free to contact me if you have any question. Thank you for your anticipated cooperation.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachment
cc: Sandy M. Carter (via facsimile)
Mark A. Lauretti, Mayor of Shelton (via facsimile)
Michael J. Davis (via facsimile)

Nestlé USA

MERRITVIEW
383 MAIN AVE., 5TH FLOOR
NORWALK, CT 06851

TEL (203) 750-7222
FAX (203) 846-1445

MICHAEL J. DAVIS
DIRECTOR OF TAXES
NESTLE HOLDINGS, INC.

August 8, 2002

Kenneth C. Baldwin
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103

Re: Verizon Wireless Proposal to Share an Existing Telecommunications Facility in the City of Shelton

Dear Mr. Baldwin:

In response to your letter dated August 7, 2002, please be advised that the Cellular Tower Committee was unable to meet on July 30th to discuss the tower located at 309 River Road in Shelton. Due to vacation and travel commitments, the members of this newly formed committee will not be meeting until early September. At that time we will elect a chairman and review your client's proposal.

Our recommendation to Mayor Lauretti and the Siting Council was to request a decision delay until the latter part of September in an effort to give the Cellular Tower Committee members ample opportunity to understand the proposal and to do the necessary research prior to providing our recommendations to the Shelton city officials and residents.

If you need to contact me, I can be reached at 203-247-0507.

Sincerely,

Michael J. Davis

MJD:vlp

cc: Sandy M. Carter, Verizon Wireless
Mayor Lauretti, City of Shelton
Sandy Nesteriak, Mayor's Office

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

July 22, 2002

Honorable Mark A. Lauretti
Mayor
City of Shelton
54 Hill Street
P. O. Box 364
Shelton, CT 06484

RE: **TS-VER-126-020712** - Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 309 River Road, Shelton, Connecticut.

Dear Mayor Lauretti:

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

The Council will consider this item at the next meeting scheduled for August 1, 2002 at 2:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

Please call me or inform the Council if you have any questions or comments regarding this proposal.

Thank you for your cooperation and consideration.

Very truly yours,

SDP/laf

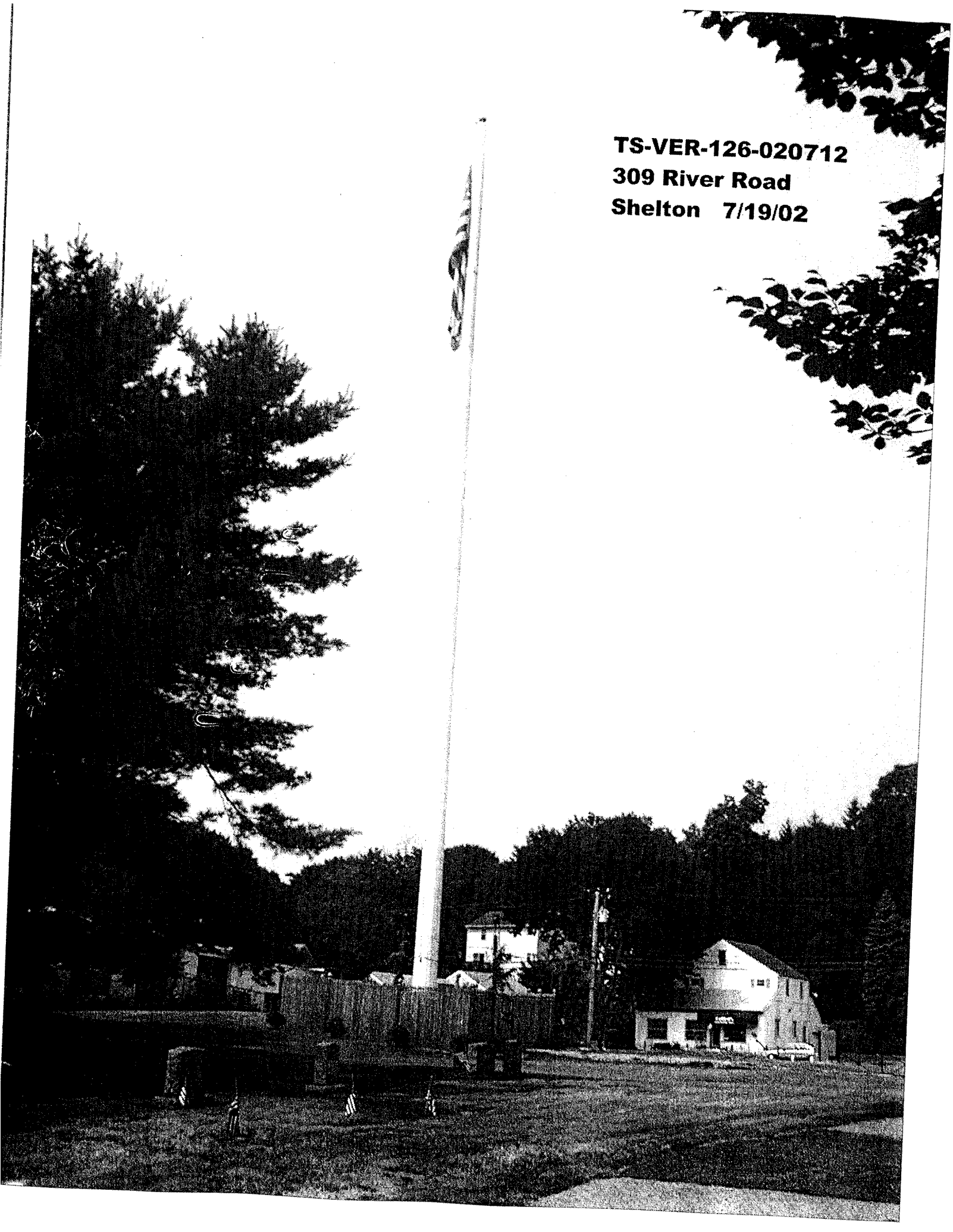
S. Derek Phelps
Executive Director

SDP/laf

Enclosure: Notice of Intent

c: Richard Schultz, Planning AdministratorCity of Shelton

I:\siting\cm\bam-ver\shelton\lauretti.doc


TS-VER-126-020712
309 River Road
Shelton 7/19/02

STATE OF CONNECTICUT

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Web Site: www.state.ct.us/csc/index.htm

July 15, 2002

Via Facsimile

Ms. Sandy Carter
Manager – Real Estate/Zoning
Verizon Wireless
99-101 East River Drive
West Hartford, CT 06106

RE: **TS-VER-126-020712** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 309 River Road, Shelton, CT.

Dear Ms. Carter:

With regard to the above referenced filing, please provide the following radio frequency information for the existing VoiceStream and proposed Verizon antennas: number of channels per sector, ERP Watts per channel.

If you have any questions about this request, please call me at the above number. Thank you for your assistance in this matter.

Sincerely,

David Martin
Siting Analyst I

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verizonwireless

June 20, 2002

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

Re: **Request by Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of a Tower Facility Located at 309 River Road, Shelton, Connecticut**

Dear Chairman Gelston:

Pursuant to Connecticut General Statutes (C.G.S.) Sec. 16-50aa, Cellco Partnership d/b/a Verizon Wireless hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use by Verizon Wireless of an existing stealth flagpole tower located at 309 River Road, Shelton, Connecticut. The property is owned by the Riverside Cemetery Association of Shelton and leased to VoiceStream Wireless Corporation. VoiceStream owns and manages the tower. As shown on the attached drawings and as further described below, Verizon Wireless proposes to install antennas on the existing tower and to locate its equipment at the base of the tower. Verizon Wireless requests that the Council find that the proposed shared use of the tower facility satisfies the criteria stated in the C.G.S. Section 16-50aa, and to issue an order approving the proposed shared use.

Background

Verizon Wireless is licensed by the Federal Communications Commission to provide cellular telephone service in the Fairfield County New England County Metropolitan Area (NECMA), which includes the area to be served by the proposed Shelton installation.

The facility at 309 River Road, Shelton, Connecticut consists of a 120-foot AGL stealth flagpole tower. Verizon Wireless and VoiceStream have agreed to the proposed shared use of this tower pursuant to mutually acceptable terms and conditions. VoiceStream has authorized Verizon Wireless to apply for all necessary permits, approvals and authorizations that may be required for the proposed shared use of this facility.

Verizon Wireless proposes to install three (3) flush-mounted panel type antennas inside the flagpole, with their center of radiation at approximately 99 feet above ground level ("AGL"). Verizon Wireless will also install one (1) GPS antenna on the equipment cabinet.

Equipment associated with these antennas will be located in cabinets placed on a 6' x 15' 6" concrete pad located near the base of the tower.

C.G.S. Section 16-50aa 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 use". (G.C.S. Section 16-50aa(c)(1)). The shared use of the tower satisfies these criteria as follows:

A. Technical Feasibility. The existing tower is structurally capable of supporting the proposed Verizon Wireless antennas. Enclosed is the structural design and analysis of the tower.

B. Legal Feasibility. Under C.G.S. Section 16-50aa, the Council has been authorized to issue an order approving the proposed shared use of an existing communications tower facility, such as the facility on River Road, Shelton. This authority complements the Council's prior existing authority under C.G.S. Section 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. Section 16-50x(a) directs the Council to "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 tower facilities. Under the authority vested in the Council by C.G.S. Section 16-50aa, 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. The addition of the proposed antennas would not increase the height of the tower, and would not extend the boundaries of the tower site including the placement of the equipment building near the base of the existing tower.

2. The proposed installation would not increase the noise levels at the existing facility by six decibels or more.

3. Operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base to a level at or above the FCC standard. "Worst-case" exposure calculations for a point at the base of the tower are as follows:

	Applicable FCC Standard (mW/cm^2)	Calculated "Worst-Case" (mW/cm^2)	Percentage of Standard
Verizon	0.583	0.0660	11.32%
VoiceStream	1.00	0.049225	4.9225%

This calculation includes two sets of Voicestream antennas.

The collective "worst-case" exposure would be only 16.2425% of the FCC standard, as calculated for mixed frequency sites. Power density levels from shared use of the tower facility would thus be well below applicable FCC standards.

4. The proposed installations would not require any water or sanitary facilities, or generate discharges to water bodies. After construction is complete, the proposed installation would not generate any traffic other than periodic maintenance visits.

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

D. Economic Feasibility. As previously mentioned, VoiceStream and Verizon Wireless 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 Verizon Wireless antennas. The applicant is not aware of any other public safety concerns relative to the proposed tower sharing of the existing tower. In fact, the provision of new and improved cellular phone service in the Shelton area is expected to enhance the safety and welfare of area residents.

Conclusion

For the reasons discussed above, the proposed shared use of the existing telecommunications facility at 309 River Road satisfies the criteria stated in C.G.S. Section 16-50aa, and advances the General Assembly's and the Council's goal of preventing the proliferation of towers in Connecticut. The applicant therefore requests that the Council issue an order approving the proposed shared use.

Thank you for your consideration of this matter.

Sincerely,

Sandy M. Carter

Manager-Real Estate/Zoning
Verizon Wireless

cc: Mark A. Lauretti, Mayor
Enclosure

verizon wireless

June 20, 2002

Honorable Mark A. Lauretti,
Mayor
Town Hall
54 Hill Street
Shelton, CT. 06484

Dear Mr. Lauretti:

This letter is to inform you that Cellco Partnership d/b/a Verizon Wireless plans to install antennas and associated equipment at the existing tower facility located at 309 River Road, Shelton, Connecticut. I am enclosing a copy of Verizon Wireless's tower sharing application to the Connecticut Siting Council.

The application fully sets forth the Company's proposal. However, if you have any questions or require further information on our plans or the Siting Council's procedures, please contact me at (860) 803-8219 or S. Derek Phelps, Executive Director of the Connecticut Siting Council at (860) 827-2935.

Sincerely,

Sandy M. Carter

Sandy M. Carter
Regulatory Manager
Verizon Wireless

Enclosure

VoiceStream
Global Wireless by T-Mobile

June 11, 2002

RE: Letter of Authorization – Collocation on Voicestream Wireless tower.
Property address: River Road, located in the Town of Shelton, County of Fairfield, State of Connecticut

To Whom It May Concern:

Cellco Partnership, a Delaware general partnership, d/b/a Verizon Wireless ("Verizon Wireless") is currently in negotiations with Omnipoint Communications, Inc., a subsidiary of VoiceStream Wireless Corporation ("VoiceStream"), to collocate its communications equipment on the VoiceStream tower located at River Road, located in the Town of Shelton, County of Fairfield, State of Connecticut.

Verizon Wireless shall be required by the terms of the agreement to seek and obtain all necessary local permits and approvals. As a duly authorized representative of VoiceStream, permission is hereby granted to Verizon Wireless, and agents thereof, for the purpose of consummating any applications necessary to gain the required approvals from the Township of Shelton and State of Connecticut.

Any fees or charges associated with all applications or permits and any conditions placed on the applicant shall be the responsibility of Verizon Wireless.

Yours truly,

Rebecca Smiley

Rebecca Smiley
Site Marketing Coordinator, Northeast
VoiceStream Wireless Corporation
(973) 290-2913

October 24, 2001

Andy Ahrens
Verizon Wireless
WFI
1 Paragon Drive, Suite 240
Montvale, NJ 07645

RE: Lease Exhibits
VoiceStream Site Reference: **CT11206A / Shelton**
Verizon Wireless Site Reference: **CT531 / Shelton East**

Dear Andy:

Enclosed please find Verizon's Lease Exhibits for the above referenced site along with the Drawings/Structural Review Transmittal Sheet which I am sending you on behalf of Rebecca Smiley.

Should you have any questions please contact Rebecca at (973) 290-2913 or you may email her at rebecca.smiley@voicestream.com.

Thank you,

Samantha Meehan

Samantha Meehan
(973) 290-2415

Enclosures

VoiceStream WIRELESS

Drawings/Structural Review Transmittal

To: Bill Wright

From: Rebecca Smiley

Date: October 18, 2001

Re: CT11206A / Shelton Applicant: Verizon

CC: File

Attached are the following for your review. Upon review, sign the appropriate space below AND the original document provided. Return transmittal and ALL originals to the Coordinator. Please keep a copy of the **signed** documents for your files.

☒ **LEASE EXHIBITS (Site Plan/Elevation Drawings)**

Notes: _____

Approved: Bill Wright Date: 10-18-2001

Denied: _____ Date: _____

(Please comment below – attach redlines if necessary)

☐ **STRUCTURAL ANALYSIS**

Notes: _____

Approved: _____ Date: _____

Denied: _____ Date: _____

(Please comment below – attach redlines if necessary)

☐ **FINAL CONSTRUCTION DRAWINGS**

Notes: _____

Approved: _____ Date: _____

Denied: _____ Date: _____

(Please comment below – attach redlines if necessary)

Additional Comments: pending local market approval

Note: This is intended for the use of Approving Lease Exhibits and/or Structural Analysis PRIOR to execution of the sublease. Or for Approval of Final Construction Drawings which is REQUIRED prior to issuance of NTP.

1047 N 204th Avenue
Elkhorn, NE 68022
402-289-1888
Fax-333-8577

SEMAAN ENGINEERING SOLUTIONS

APPROVED
WFW 10-16-2001

October 15, 2001

Ms. Jennifer Jones
VoiceStream Wireless
1500 N.E. Irving, Suite 530
Portland, OR 97232

Re: Site CT-11206-A – Shelton, CT.

Dear Ms. Jones:

This letter will confirm the acceptability of adding the proposed antennas to the structure at the above referenced site.

The existing structure is a 120 ft STEALTH flag pole, job number 31900-0082. The monopole was designed to support the following loads:

ORIGINAL LOADING

1. 113 ft – (1) 12' x 18' Flag.
2. 95 ft to 119 ft - Dualpole panel antennas with 1-5/8" lines, stacked in three vertical positions inside of the 18" Diameter by 24 ft antenna concealment cylinder.

Note: Based on EIA-RS-222-F with an 85-MPH basic wind speed and ½" radial ice (reduction allowed).

EXISTING LOADING

1. (3) three RR65-19-00XP panel antennas in the first top bay of the 24 ft antenna concealment cylinder.
2. (3) three RR65-19-00XP panel antennas in the second top bay of the 24 ft antenna concealment cylinder.

PROPOSED LOADING

1. (3) three FR-90-12-XX panel antennas with (6) runs of 1 1/4" coax in the third bay of the 24 ft antenna concealment cylinder.

Based on a comparison of the original monopole design loading vs. the proposed antenna loading, the monopole is found to be structurally capable of supporting the proposed antennas. As the new reactions will be significantly smaller than the original reactions, no modifications are required.

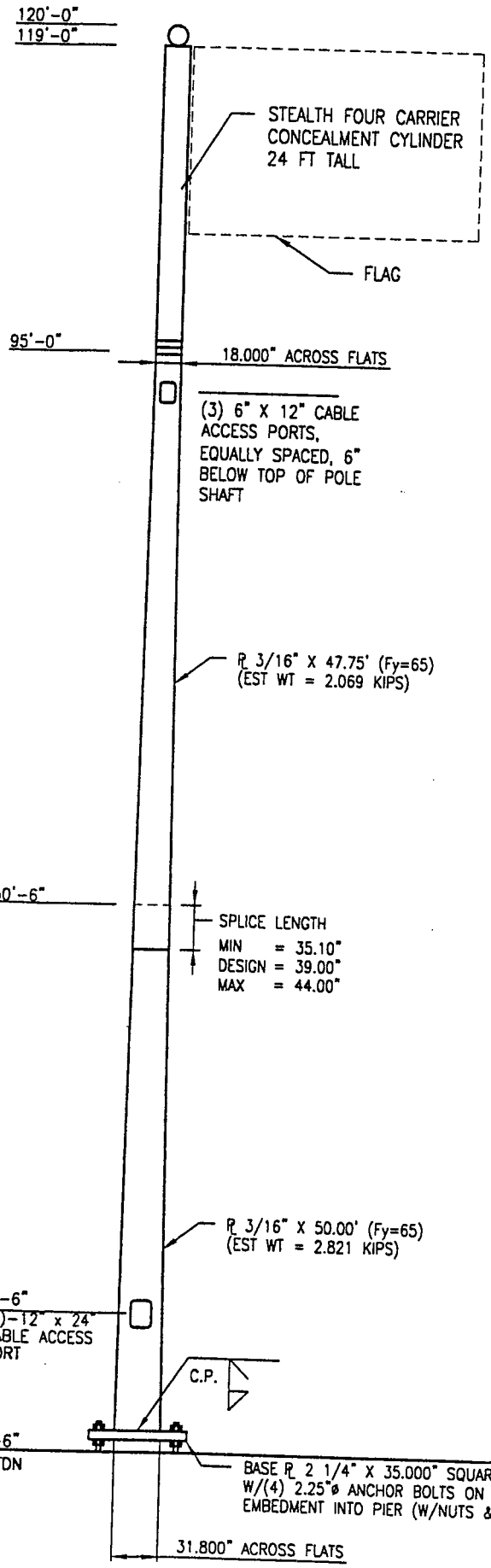
If you have any questions or require additional information, feel free to contact me at the above referenced phone number.

10-15-01

STEALTH
NETWORK TECHNOLOGIES, INC.
70-A Associate Drive
Charleston, SC 29418
Ph: (843) 207-8000
Fax: (843) 207-0207

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 221-0166 www.PJFweb.com

JOB DATA			
Page 1 of 2		Job No.	31900-0082
By	KJS	Design No.	VOIC-00336A-R1
Chk'd By	KJS	Date	09-19-2000
		Rev. No. / Rev. Date	
Pole	120-FT FLAG POLE - SHELTON,CT		
Site	CT-206-A		
Owner	VOICESTREAM WIRELESS		206
Ref. No.			
Design	85 MPH / 74 MPH + 1/2" ICE ACCORDING TO TIA/EIA-222-F 1996		



LOAD CASES		
CASE 1	85 MPH WITH NO ICE	DESIGN WIND
CASE 2	74 MPH WITH 1/2" RADIAL ICE	REDUCED WIND WITH ICE
CASE 3	50 MPH WITH NO ICE	OPERATIONAL WIND

POLE SPECIFICATIONS	
Pole Shape Type:	18-SIDED POLYGON
Taper:	0.150000 IN/FT
Shaft Steel:	ASTM A572 GRADE 65
Base PL Steel:	ASTM A572 GRADE 50 (50 KSI)
Anchor Bolts:	2 1/4"ø x 7'-0" LONG #18J ASTM A615 GRADE 75

ANTENNA LIST		
No.	Elev.	Description
1	113.00	12-FT X 18-FT FLAG
2-3	107.00	18"ø X 24-FT TALL ANTENNA CONCEALMENT CYLINDER

ANTENNA FEED LINES RUN INSIDE OF POLE.

Elevation	85 MPH WIND		50 MPH WIND	
	Lateral Deflection (Inches)	Rotation (sway) (degrees)	Lateral Deflection (Inches)	Rotation (sway) (degrees)
TOP	45.9	4.034	15.9	1.396

SHAFT SECTION DATA					
Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches) @ Top	Diameter Across Flats (inches) @ Bottom
1	47.75	0.1875	39.00	18.000	25.163
2	50.00	0.1875		24.300	31.800

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

UNFACTORED BASE REACTIONS

MOMENT =	600 ft-kips
SHEAR =	9.0 kips
AXIAL =	8.5 kips

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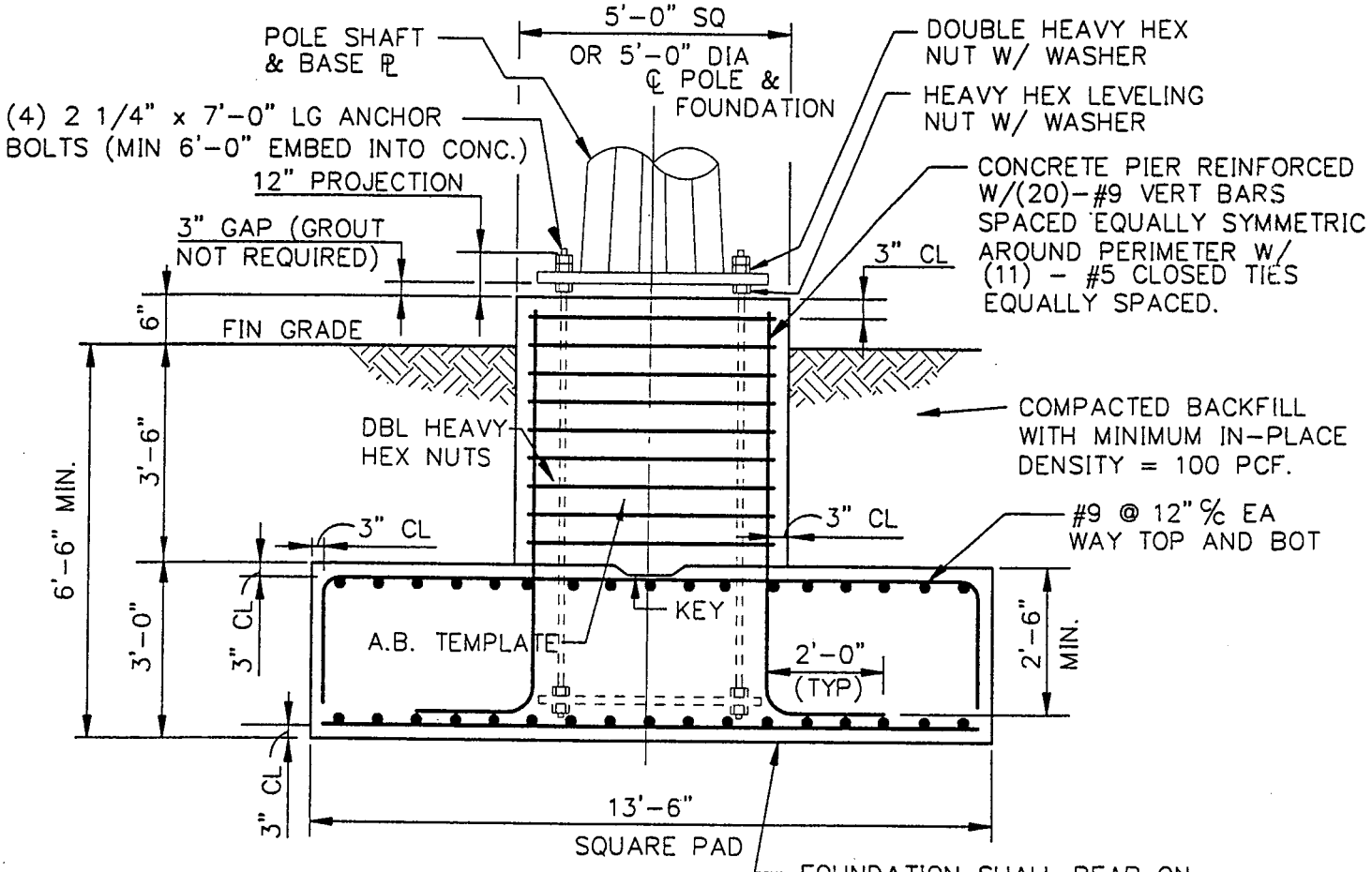
STEALTH
NETWORK TECHNOLOGIES, INC.
3270-A Associate Drive
N. Charleston, SC 29418
Ph: (843) 207-8000
Fax: (843) 207-0207

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614)-221-6679 FAX (614)-221-0166

Pole 120 FT FLAG POLE
Location SHELTON, CT
Site CT-206-A
Owner AT&T WIRELESS SERVICES
Design 85 MPH/74 MPH + 1/2" RADIAL ICE

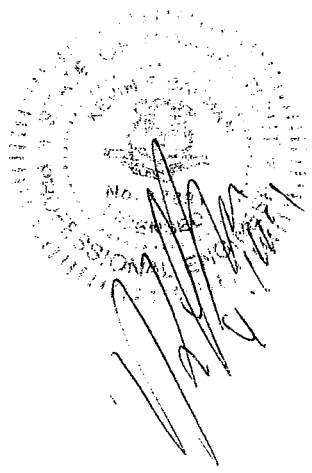
Page 2 Of 2
By KJS /KJS Date 09-19-2000
Job No. 31900-0082 (STEALTH VOIC-00336A-R1)
Revision No. Date
According to TIA/EIA-222-F 1996



PAD & PIER FOUNDATION

NOTES:

1. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF AT LEAST 3000 PSI AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (GRADE 60) EXCEPT PIER TIES MAY BE ASTM A615 (GRADE 40).
3. SEE PAGE 1 FOR ANCHOR BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE.
4. TOTAL CONCRETE = 24 CUBIC YARDS.
5. FOUNDATION DESIGN BASED UPON GEOTECHNICAL EXPLORATION REPORT PREPARED BY: DR. CLARENCE WELTI, P.E.
   DATED: 05-01-2000
6. CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.
7. THE FOUNDATION WAS DESIGNED USING THE FOLLOWING SERVICE LOADS: MOMENT = 600 FT-KIPS, SHEAR = 9.0 KIPS, AND AXIAL = 8.5 KIPS.



C:\TOWER\DRAWINGS\MONOPOLE\319-STEALTH_\319-2000\319000085F000.DWG

PJF_Pole (tm) - Monopole Design Program
Windows Version 1.28.0100 Tue Sep 19, 2000 - 3:34:10 pm
(c) 1993 to 1998 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31900-0082 Design No: VOIC-00336A-R1 Engineer : KJS
Description : 120-Ft Flag Pole - Shelton,CT - CT-206-A
Design..... : 85 mph / 74 mph + 1/2" ice
Owner..... : VoiceStream Wireless Client: Stealth Network Technologie
Status..... : Engineering Final Design Revision: Rev. Date :

S U M M A R Y O F A N A L Y S I S R E S U L T S

Pole Height.....: 94.50 ft
Top Diameter.....: 18.000 in
Bottom Diameter.....: 31.800 in
Pole Shape.....: 18-Sided Polygon
Splice Joint Type...: Taper shaft - Slip Joint Splice
Shaft Taper.....: 0.150000 (in/ft)
Shaft Steel Weight..: 4.890 kips

POLE SHAFT PROPERTIES:

Shaft Section Number	Section Length (ft)	Wall Thickness [t] (in)	Steel Yield [Fy] (ksi)	Top Diameter [Dt] (in)	Bottom Diameter [Db] (in)	Slip Joint Overlap (in)
1.	47.750	0.18750	65	18.000	25.163	39.00
2.	50.000	0.18750	65	24.300	31.800	

POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:

Shaft Section Number	Wind Load No.	Wind Speed (mph)	Radial Ice (in)	At Base of Section: Sect. Elev. (ft)	Axial Load (kips)	Horiz. Shear (kips)	Bending Moment (ft-kips)	Max. Ratio Actual/ Allowable [Ftot/Fb]
1.	1	85.0	0.00	50.50	5.468	4.066	171.722	0.4576
2.	1	85.0	0.00	0.50	8.240	6.448	440.101	0.7396
>> MAXIMUM BASE REACTIONS :					8.240	6.448	440.101 <<	

POLE DEFLECTION AND ROTATION AT TOP AND AT HIGHEST MICROWAVE DISH ELEVATION:

Wind Load No.	Wind Speed (mph)	Radial Ice (in)	Location	Elev (ft)	Deflection (in)	Rotation (deg)	Max. Allowable Rotation Limit (deg)
1.	85.0	0.00	Top	95.00	45.889	4.034	
2.	73.6	0.50	Top	95.00	36.176	3.179	
3.	50.0	0.00	Top	95.00	15.864	1.396	

PJF_Pole (tm) - Monopole Design Program
Windows Version 1.28.0100 Tue Sep 19, 2000 - 3:34:10 pm

Job No.....: 31900-0082 Design No: VOIC-00336A-R1 Engineer : KJS
Description : 120-Ft Flag Pole - Shelton,CT - CT-206-A
Design..... : 85 mph / 74 mph + 1/2" ice
Owner..... : VoiceStream Wireless Client: Stealth Network Technologie
Status..... : Engineering Final Design Revision: Rev. Date :

Pole Height : 94.5 ft
Pole Shape : 18-Sided Polygon
Pole Type : Taper shaft - Slip Joint Splice
Pole Taper : 0.150000 (in/ft)

INPUT TUBE PROPERTIES:

Tube Sect No.	Top / Splice Elev (ft)	Bot Tube Elev (ft)	Tube Length (ft)	Wall Thick [t] (in)	Steel [Fy] (ksi)	Top Diam [Dt] (in)	Bot Diam [Db] (in)	Slip Joint Overlap (in)
1.	95.00	47.25	47.750	0.18750	65	18.000	25.163	39.00
2.	50.50	0.50	50.000	0.18750	65	24.300	31.800	

TUBE SECTION PROPERTIES:

Tube Sect No.	Section Weight (kips)	Location	Elev (ft)	Diam. Across Flats (in)	Wall Thick [t] (in)	[W/t] Ratio	Diam/ Thick [D/t] Ratio	Area (in^2)	Ix (in^4)
1	2.069	@Top	95.0	18.000	0.1875	15.16	96.00	10.60	424.8
		@Splice	50.5	24.675		21.44	131.60	14.57	1103.7
		@Bot	47.3	25.163		21.90	134.20	14.86	1170.9
2	2.821	@Top	50.5	24.300	0.1875	21.09	129.60	14.35	1053.7
		@Bot	0.5	31.800		28.14	169.60	18.81	2374.5

Total Shaft Steel Weight = 4.890 kips

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Segment Properties: (@ Max Segment = 10 ft)

Tube Segmt No.	Segment Feature Location	Segment Elev. (ft)	Diam. Across Flats (in)	Wall Thick [t] (in)	[W/t] Ratio	Diam/ Thick [D/t] Ratio	Area (in^2)	Ix (in^4)
1.	top	95.000	18.000	0.18750	15.16	96.00	10.60	424.8
2.	<arm [1]>	95.000	18.000	0.18750	15.16	96.00	10.60	424.8
3.	<arm [2]>	95.000	18.000	0.18750	15.16	96.00	10.60	424.8
4.		90.500	18.675	0.18750	15.80	99.60	11.00	475.0
5.		89.500	18.825	0.18750	15.94	100.40	11.09	486.6
6.		80.500	20.175	0.18750	17.21	107.60	11.89	600.2
7.		79.500	20.325	0.18750	17.35	108.40	11.98	613.8
8.		70.500	21.675	0.18750	18.62	115.60	12.79	745.7
9.		69.500	21.825	0.18750	18.76	116.40	12.88	761.4
10.		60.500	23.175	0.18750	20.03	123.60	13.68	913.0
11.		59.500	23.325	0.18750	20.17	124.40	13.77	931.0
12.	top sec(2)	50.500	24.675	0.18750	21.44	131.60	14.57	1103.7
13.		49.500	24.450	0.18750	21.23	130.40	14.44	1073.5
14.	bot sec(1)	47.250	24.787	0.18750	21.55	132.20	14.64	1119.0
15.		40.500	25.800	0.18750	22.50	137.60	15.24	1262.9
16.		39.500	25.950	0.18750	22.64	138.40	15.33	1285.2
17.		30.500	27.300	0.18750	23.91	145.60	16.13	1498.0
18.		29.500	27.450	0.18750	24.05	146.40	16.22	1523.0
19.		20.500	28.800	0.18750	25.32	153.60	17.03	1760.6
20.		19.500	28.950	0.18750	25.46	154.40	17.12	1788.5
21.		10.500	30.300	0.18750	26.73	161.60	17.92	2052.3
22.		9.500	30.450	0.18750	26.87	162.40	18.01	2083.1
23.	base	0.500	31.800	0.18750	28.14	169.60	18.81	2374.5

Total Number of Antennas / Arms = 2

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Description : 120-Ft Flag Pole - Shelton,CT - CT-206-A
Design..... : 85 mph / 74 mph + 1/2" ice
Owner..... : VoiceStream Wireless Client: Stealth Network Technologie
Status..... : Engineering Final Design Revision: Rev. Date :

ANTENNA AND ARM PROPERTIES AND LOAD DATA:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Ant Arm No.	Arm Mount. Elev. (ft)	Load Applic. Elev. (ft)	Arm Length (ft)	Ice Load Case	Antenna Area [CaAa] (sf)	Antenna Force [qzGhCaAa] (lbs)	Antenna Weight (lbs)
[1]	95.000	113.000	0.0000	No Ice:	7.90	351.01	100.00
	Description: 12-Ft x 18-Ft Flag						
		[Gh] 1.69	[Kz] 1.421	No Ice:	[qz] (psf) 26.291	[qz] [Gh] (psf) 44.432	
[2]	95.000	107.000	0.0000	No Ice:	38.06	1664.93	3250.00
	Description: 18"ø x 24-Ft Tall Antenna Concealment Cylinder						
		[Gh] 1.69	[Kz] 1.399	No Ice:	[qz] (psf) 25.885	[qz] [Gh] (psf) 43.745	

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POLE SHAFT LOADS:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Design Loads per TIA/EIA-222-F Standard; Gust Factor ..... Gh = 1.69
Pole DL Overload Factor = 1
Per TIA/EIA Table 1: Note 3: For all cross sectional shapes,
Force Coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Top of Segment Elev. (ft)	Expos Coeff [Kz]	Veloc Press [qz] (psf)	Pole Veloc Coeff [C]	Force Coeff [Cf]	Projected Area Shaft [Ae] (sf)	Projected Area Segment [Cf Ae] (sf)	Segment Wind Force (lbs)	Shaft Segment Weight (lbs)
95.000	1.353	25.02	148.29	0.650	0.000	0.000	0.00	0.00
95.000	1.353	25.02	148.29	0.650	0.000	0.000	0.00	0.00
95.000	1.353	25.02	148.29	0.650	0.752	0.489	20.66	18.07
90.500	1.334	24.68	152.79	0.650	7.688	4.997	209.66	184.91
89.500	1.330	24.60	153.77	0.650	1.575	1.024	42.56	37.89
80.500	1.290	23.86	162.32	0.650	14.738	9.579	391.61	354.70
79.500	1.286	23.78	163.24	0.650	1.700	1.105	44.40	40.93
70.500	1.242	22.98	171.12	0.650	15.863	10.311	406.59	382.04
69.500	1.237	22.88	171.95	0.650	1.825	1.186	45.87	43.97
60.500	1.189	21.99	179.00	0.650	16.987	11.042	417.84	409.38
59.500	1.183	21.89	179.73	0.650	1.950	1.268	46.89	47.01
50.500	1.129	20.89	185.73	0.650	18.097	11.763	424.18	599.10
49.500	1.123	20.77	183.52	0.650	2.044	1.328	46.62	49.28
47.250	1.108	20.49	184.82	0.650	4.125	2.681	93.23	99.48
40.500	1.060	19.61	188.18	0.650	14.831	9.640	325.97	357.74
39.500	1.053	19.47	188.59	0.650	2.169	1.410	46.39	52.32
30.500	1.000	18.50	193.38	0.650	20.081	13.053	414.70	484.56
29.500	1.000	18.50	194.44	0.650	2.294	1.491	46.60	55.36
20.500	1.000	18.50	204.00	0.650	21.206	13.784	430.87	511.90
19.500	1.000	18.50	205.06	0.650	2.419	1.572	49.14	58.40
10.500	1.000	18.50	214.63	0.650	22.331	14.515	453.72	539.23
9.500	1.000	18.50	215.69	0.650	2.544	1.653	51.68	61.43
1.500	1.000	18.50	224.19	0.650	20.800	13.520	422.61	502.40
						Summation TOTAL =	4431.79	4890.11

---------(END LOAD CASE 1 -- POLE SHAFT LOADS)----------

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Owner..... : VoiceStream Wireless Client: Stealth Network Technologie
Status..... : Engineering Final Design Revision: Rev. Date :

POLE SHAFT SEGMENTS -- AXIAL AND SHEAR FORCES:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Tube Segment No.	Segment Elevation (ft)	Axial Load (kips)	Cumulative Axial Load (kips)	Horiz. Shear (kips)	Cumulative Horiz. Shear (kips)
1.	95.000	0.000	0.000	0.000	0.000
2.	95.000	0.100	0.100	0.351	0.351
3.	95.000	3.268	3.368	1.686	2.037
4.	90.500	0.185	3.553	0.210	2.246
5.	89.500	0.038	3.591	0.043	2.289
6.	80.500	0.355	3.946	0.392	2.680
7.	79.500	0.041	3.987	0.044	2.725
8.	70.500	0.382	4.369	0.407	3.131
9.	69.500	0.044	4.413	0.046	3.177
10.	60.500	0.409	4.822	0.418	3.595
11.	59.500	0.047	4.869	0.047	3.642
12.	50.500	0.599	5.468	0.424	4.066
13.	49.500	0.049	5.517	0.047	4.113
14.	47.250	0.099	5.617	0.093	4.206
15.	40.500	0.358	5.975	0.326	4.532
16.	39.500	0.052	6.027	0.046	4.578
17.	30.500	0.485	6.511	0.415	4.993
18.	29.500	0.055	6.567	0.047	5.040
19.	20.500	0.512	7.079	0.431	5.471
20.	19.500	0.058	7.137	0.049	5.520
21.	10.500	0.539	7.676	0.454	5.973
22.	9.500	0.061	7.738	0.052	6.025
23.	1.500	0.502	8.240	0.423	6.448
Base	0.500		8.240		6.448

---------(END LOAD CASE 1 -- AXIAL AND SHEAR FORCE)----------

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POLE SHAFT SEGMENTS -- MOMENTS and DEFLECTIONS:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Segmnt Elev (ft)	[-------- MOMENTS (ft-kips) ---------] From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment	[--DEFLECTIONS (inch)-------] No P-Delta Effects	Total W/ P-Delta Effects	Total Rotation (deg)
95.00	26.297	0.000	0.000	26.297	43.356	45.889	4.034
95.00	26.297	0.000	0.000	26.297	43.356	45.889	4.034
95.00	26.297	0.000	0.004	26.301	42.957	45.466	4.034
90.50	35.369	0.510	1.205	37.084	39.006	41.276	3.944
89.50	37.385	0.740	1.449	39.575	38.228	40.451	3.922
80.50	55.529	4.752	3.691	63.972	31.459	33.266	3.679
79.50	57.545	5.416	3.944	66.905	30.735	32.498	3.649
70.50	75.688	13.414	6.230	95.331	24.510	25.891	3.345
69.50	77.704	14.529	6.483	98.717	23.852	25.194	3.308
60.50	95.848	26.647	8.746	131.240	18.273	19.277	2.957
59.50	97.863	28.226	8.993	135.083	17.692	18.662	2.916
50.50	116.007	44.556	11.159	171.722	12.835	13.521	2.530
49.50	118.023	46.606	11.399	176.028	12.338	12.995	2.485
47.25	122.559	51.386	11.870	185.815	11.373	11.975	2.379
40.50	136.166	67.148	13.436	216.750	8.287	8.715	2.055
39.50	138.182	69.664	13.648	221.494	7.884	8.289	2.006
30.50	156.326	94.386	15.394	266.105	4.694	4.927	1.557
29.50	158.342	97.363	15.568	271.272	4.389	4.606	1.507
20.50	176.485	126.285	16.928	319.698	2.098	2.199	1.046
19.50	178.501	129.740	17.054	325.294	1.895	1.985	0.994
10.50	196.645	163.073	17.931	377.649	0.527	0.551	0.526
9.50	198.661	167.031	17.998	383.690	0.427	0.447	0.473
0.50	216.804	205.004	18.292	440.101	0.000	0.000	0.000

---------(END LOAD CASE 1 -- MOMENTS AND DEFLECTIONS)----------

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POLE SHAFT SEGMENTS -- ACTUAL VS. ALLOWABLE STRESSES:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph
Note: Per TIA/EIA Sec. 3.1.1.1: Allow a 1/3 stress increase for poles under 700 feet in height. The allowable stresses shown include the factor of 1.333

Segmnt Elev (ft)	[---------- ACTUAL STRESSES ----------] Bending [fb] (ksi)	Axial [fa] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Allow. Stress [Fb] (ksi)	Actual/ Allowable [Ftot/Fb] Ratio
95.00	6.789	0.000	0.000	0.000	6.789	52.00	0.1306
95.00	6.789	0.009	0.033	0.066	6.800	52.00	0.1308
95.00	6.790	0.318	0.190	0.383	7.176	52.00	0.1380
90.50	8.884	0.323	0.176	0.407	9.262	52.00	0.1781
89.50	9.328	0.324	0.173	0.412	9.704	52.00	0.1866
80.50	13.101	0.332	0.151	0.450	13.473	52.00	0.2591
79.50	13.497	0.333	0.148	0.454	13.869	52.00	0.2667
70.50	16.882	0.342	0.130	0.489	17.257	52.00	0.3319
69.50	17.239	0.343	0.129	0.492	17.614	52.00	0.3387
60.50	20.296	0.352	0.114	0.524	20.678	52.00	0.3976
59.50	20.619	0.354	0.112	0.528	21.002	52.00	0.4039
50.50	23.391	0.375	0.100	0.557	23.793	52.00	0.4576
49.50	24.426	0.382	0.102	0.568	24.835	52.00	0.4776
47.25	25.079	0.384	0.099	0.573	25.489	52.00	0.4902
40.50	26.979	0.392	0.092	0.593	27.396	52.00	0.5269
39.50	27.248	0.393	0.091	0.596	27.667	52.00	0.5320
30.50	29.546	0.404	0.082	0.617	29.975	52.00	0.5764
29.50	29.789	0.405	0.081	0.620	30.218	52.00	0.5811
20.50	31.861	0.416	0.074	0.641	32.301	51.56	0.6264
19.50	32.081	0.417	0.073	0.643	32.522	51.44	0.6322
10.50	33.970	0.428	0.066	0.665	34.422	50.37	0.6834
9.50	34.171	0.430	0.066	0.668	34.624	50.25	0.6890
0.50	35.909	0.438	0.060	0.684	36.370	49.17	0.7396

---------(END LOAD CASE 1 -- ACTUAL VS. ALLOWABLE STRESSES)----------

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M O N O P O L E B A S E P L A T E D E S I G N D E T A I L S

Shaft Shape .....: 18 Sided Polygon Stress Increase ...: 1.333 Factor
Base Dia, DF ....: 31.800 Inches Base Plate Shape ..: Square
PT-to-PT, DP ....: 32.291 Inches
Min Bolt Circle .: 38.800 Inches Use Bolt Circle ...: 39.000 Inches

---

Base Reactions :	DESIGN	USER
Moment .....:	440.1 Ft-Kips	440.101 Ft-Kips
Axial Load .....:	8.24 Kips	8.24 Kips

Anchor Bolt Details :	DESIGN	USER
Number of Bolts .....:	4	4
Bolt Diameter .....:	2.250 Inches	2.250 Inches
Bolt Type .....:	#18J ASTM A615	#18J ASTM A615
Y-Distance .....:	0	0
Mom. of Inertia .....:	752.72 In^4	760.50 In^4
Bolt Tension, T .....:	136.11 Kips	135.42 Kips
Allowable Tension ...:	194.81 Kips	194.81 Kips
Bolt Compression, C .:	138.17 Kips	137.48 Kips

Base Plate Details :	DESIGN	USER
Plate Moment, MPL ...:	483.61 In-Kips	494.91 In-Kips
Bend Plane, W .....:	16.69 Inches	17.70 Inches
Plate Thickness, t ..:	1.865 Inches	2.250 Inches
Plate Width .....:	34.291 Inches	35.000 Inches
Plate Steel .....:	ASTM A572 GRADE 50 (50 KSI)	ASTM A572 GRADE 50 (50 KSI)
Gross Weight .....:	621.90 Lbs	781.60 Lbs
Net Weight .....:	461.30 Lbs	587.90 Lbs
Allowable Stress ....:	49.99 Ksi	49.99 Ksi
Actual Stress .....:	49.99 Ksi	33.14 Ksi
Act./Allow Ratio ....:	1.00	0.66

B A S E P L A T E D E S I G N S U M M A R Y

USE FOLLOWING SPECIFICATIONS:

Plate Thickness .....: 2.250 Inches Number of Bolts ..: 4
Plate Width/Diameter : 35.000 Inches (Square) Bolt Circle .....: 39.00 Inches
Plate Weight .....: 0.782 Kips Bolt Diameter ....: 2.25 Inches
Bolt Type .....: #18J ASTM A615

SPREAD FOOTING FOR POLES PROGRAM BY PAUL J. FORD and COMPANY

JOB NO. 31900-008 DATE 09-19-2000 PAGE 1

120-FT FLAG POLE: SHAELTON_CT

INPUT: SPREAD FOOTING (PAD and PIER) FOR POLES

POLE LOADS: POLE WEIGHT = 8.50 kips (pole,antenna,ice,mounts,etc.)
OVERTURNING MOMENT = 600.00 ft-k (at the top of the pier)
TOTAL HORIZONTAL = 9.00 kips (at the top of the pier)
DESIGN SAFETY FACTOR AGAINST OVERTURNING = 1.50

CONCRETE: CONCRETE STRENGTH = 3000 psi at 28 days
REINFORCING STEEL STRENGTH = 60000 psi (ASTM A615 grade 60)

SOIL: WATER TABLE BELOW BOTTOM OF FOOTING
SOIL WT = 100 pcf (dry)
ALLOWABLE SOIL BEARING = 6000 psf

FOOTING SIZE: WIDTH = 13.5 ft LENGTH = 13.5 ft
THICKNESS = 3.00 ft DEPTH = 6.50 ft to bottom
PIERS = 5.00 ft square PIER 0.5 ft above grade
CONCRETE WEIGHT = 150 pcf

OUTPUT: SPREAD FOOTING (PAD and PIER) FOR POLES

VOLUME OF CONCRETE = 647 ft^3 (23.95 cubic yards)

WEIGHT OF POLE =====> 8.50 kips
WEIGHT OF CONCRETE => 97.01 kips (647 x 0.150)
WEIGHT OF SOIL =====> 55.04 kips (550 x 0.100)

TOTAL WEIGHT = 160.55 kips

OVERTURNING MOMENT = 600.00 ft-k + (9.00 k x 7.00 ft) = 663 ft-kips
RESISTING MOMENT = 160.55 k x (13.50 ft / 2) = 1084 ft-kips

SAFETY FACTOR = Mresist / O.T.M. = 1084 / 663 = 1.63 > 1.50 O.K.

ULTIMATE OVERTURNING MOMENT = 663 ft-k x 1.50 = 995 ft-kips
ULTIMATE NET SOIL BEARING PRESSURE = 13618 psf

GROSS SOIL BEARING = 3026 psf (includes soil overburden)
SOIL OVERBURDEN = 650 psf (soil overburden)
NET SOIL BEARING = 2376 psf < 6000 psf O.K.

BENDING MOMENT IN PIER = 600 ft-k +(9.00 k x 4.00 ft) = 636 ft-kips
AREA OF REINF STEEL REQUIRED IN THE PIER = 7.12 sq in (8 no. 11 bars)
(.5 % = 18.00 sq in)

BENDING MOMENT IN FOOTING = 373 ft-kips
FOOTING REINFORCING = 0.26 in^2/ft = 18 no. 4 bars @ 9.40 in. o.c.
(.18 % = 0.78 in^2/ft)

BENDING SHEAR IN THE FOOTING = 129.89 kips
ALLOWABLE BENDING SHEAR = 365.50 kips O.K.

Cellco Partnership

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY

SHELTON EAST
EAST RIVER ROAD
SHELTON, CONNECTICUT 06484

PROJECT SUMMARY

SITE NAME:	SHELTON EAST
SITE ADDRESS:	EAST RIVER ROAD SHELTON, CONNECTICUT
PROPERTY OWNER:	RIVERSIDE CEMETERY SHELTON, CT
LEASOR:	VOICESTREAM WIRELESS 100 FILLEY STREET BLOOMFIELD, CT 06002
APPLICANT:	CELLCO PARTNERSHIP 99–101 EAST RIVER DR. WEST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELLCO PARTNERSHIP (860) 803–8219
CENTER OF TOWER:	LATITUDE: 41–17–46 N LONGITUDE: 73–04–20 W BASE ELEV: 98' ±AMSL

GENERAL NOTES

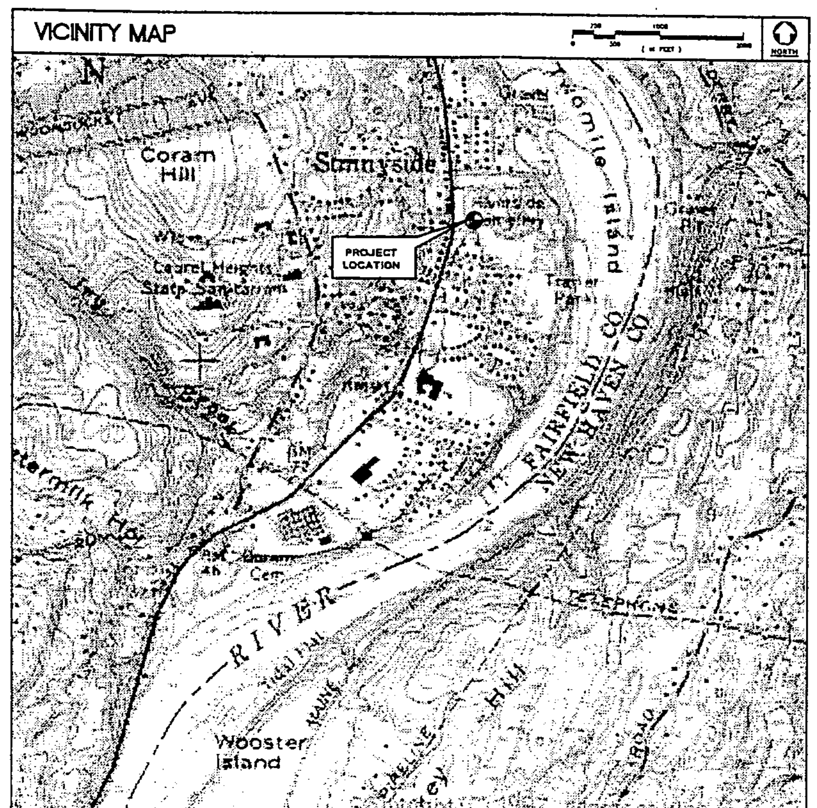
1. PROPOSED AND EXISTING ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY VERIZON WIRELESS.

SITE DIRECTIONS

FROM: 99–101 EAST RIVER DR.,EAST HARTFORD, CT.
TO: RIVER ROAD

START OUT GOING EAST ON EAST RIVER DR TOWARDS E RIVER DR EXT. TAKE THE US–5 S RAMP. MERGE ONTO CT–15 S. TAKE EXIT NUMBER 86 (I–91 S). TAKE I–91 S TO EXIT NUMBER 17 (CT–15 S/W. CROSS PKWY/E MAIN ST) TAKE CT–15 S TO EXIT 58 (CT–34 W) TOWARDS DERBY. MERGE ONTO CT–34. FOLLOW SIGNS TO CT–8 S. TAKE CT–8 S TO EXIT 14 (CT–110/HOWE AVE). TURN LEFT ONTO HOWE AVE. FLAG POLE IS JUST AFTER CEMETARY ON LEFT HAND SIDE.

VICINITY MAP



LEGEND

SYMBOL	DESCRIPTION
	SECTION OR DETAIL NUMBER SHEET WHERE DETAIL/SECTION OCCURS
	ELEVATION NUMBER SHEET WHERE ELEVATION OCCURS

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T–1	TITLE SHEET	01
C–1	COMPOUND PLAN AND ELEVATION	01

REVISIONS

00	04/05/02	SITING COUNCIL REVIEW
01	06/26/02	FINAL SITING COUNCIL

Cellco Partnership
d.b.a. verizon wireless

Natcomm, LLC · Engineering Consultants
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Civil · Structural · Mechanical · Electrical

SHELTON EAST

RIVER ROAD
SHELTON, CT 06484

PROJECT NO:	447A
DRAWN BY:	DMD
CHECKED BY:	AAJ
SCALE:	AS NOTED
DATE:	11/05/01

TITLE SHEET

T–1

DWG. 1 OF 2

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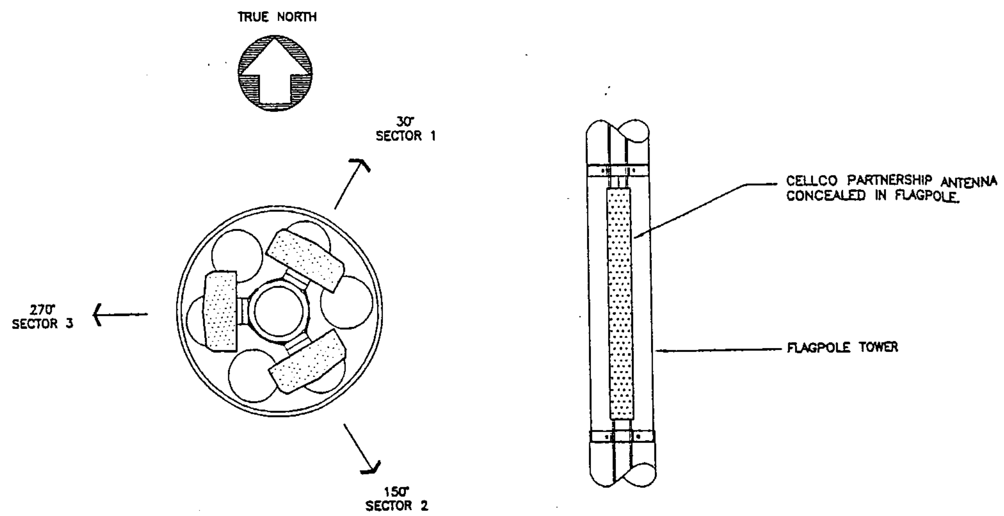
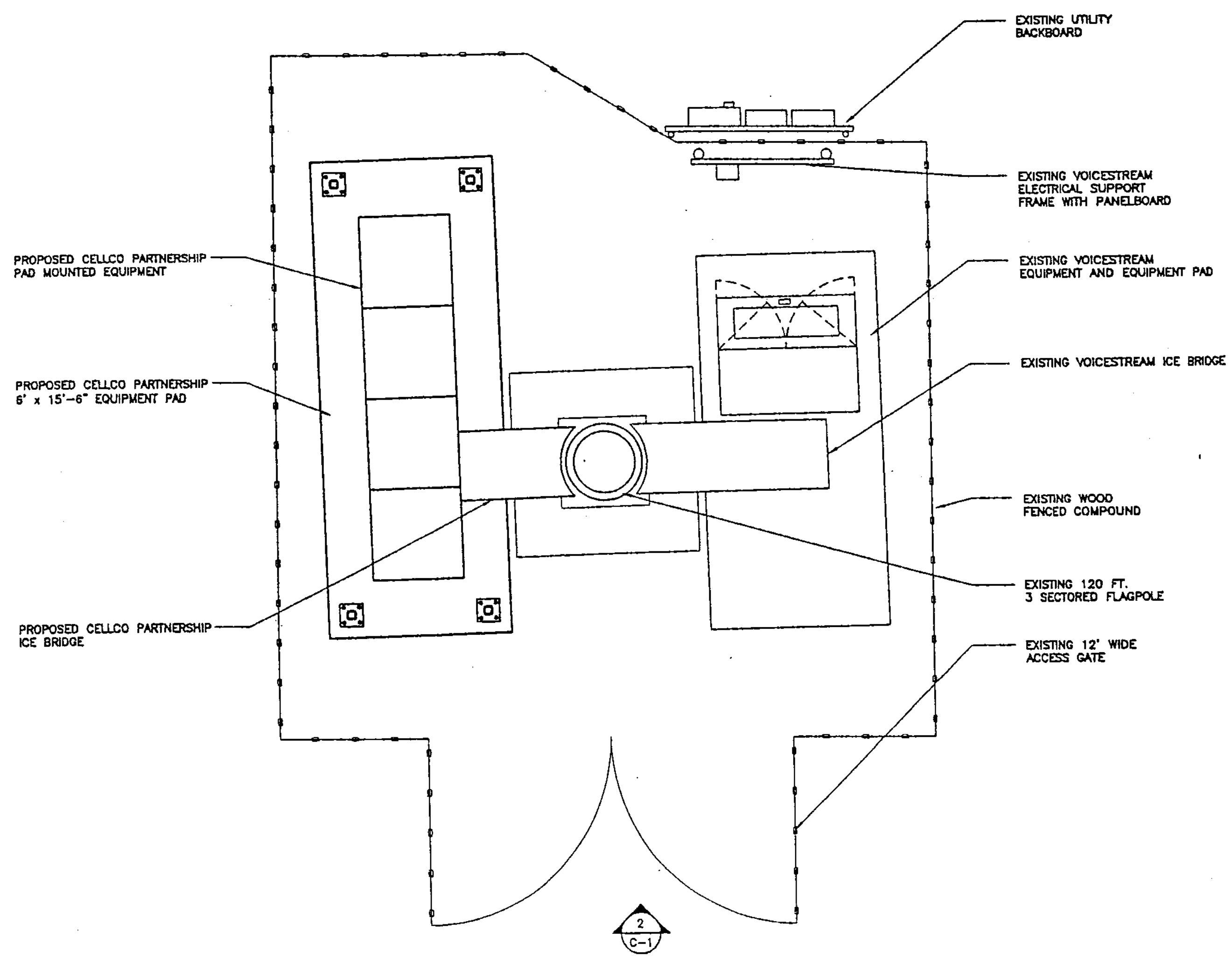
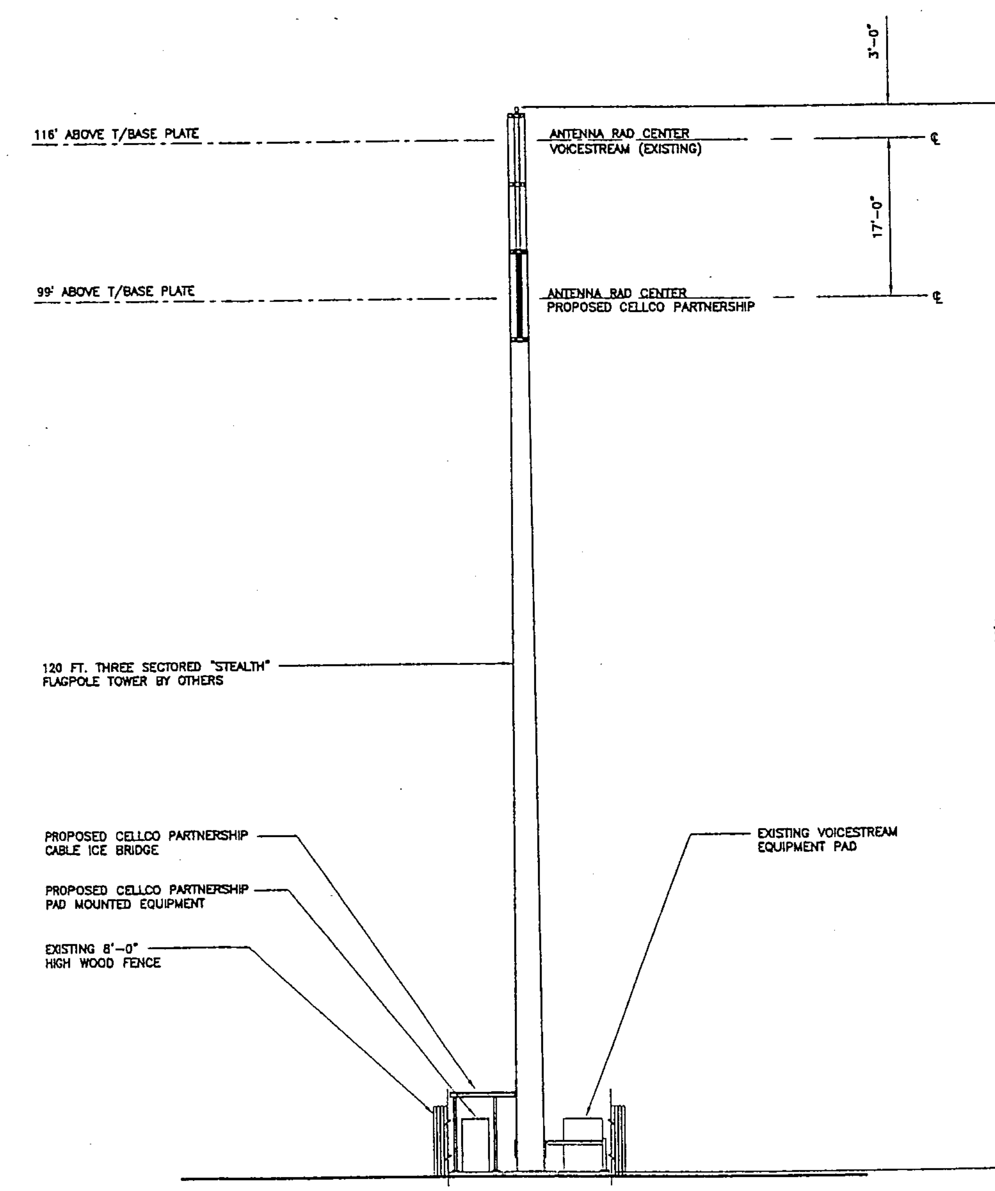


3 / C-1 FLAG POLE ANTENNA MOUNTING CONFIGURATION
NOT TO SCALE



1 / C-1 COMPOUND
SCALE: 3/8" = 1'-0"



2 / C-1 TOWER ELEVATION
SCALE: 1" = 10'-0"

REVISIONS		
00	04/05/02	SITING COUNCIL REVIEW
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COMPOUND PLAN AND ELEVATION

C-1

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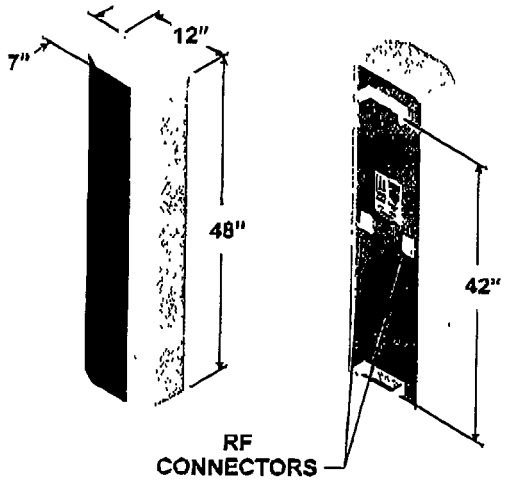
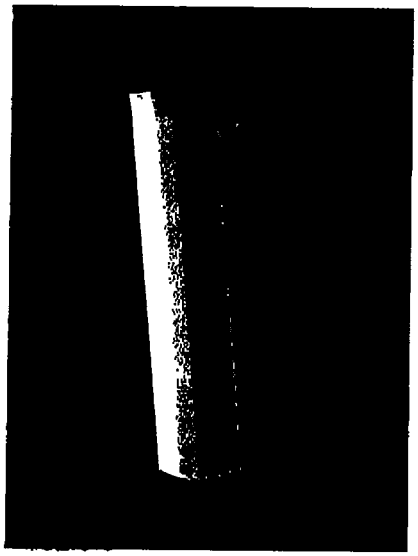
806 MHz - 896 MHz (A)





70° beamwidth

11.6 dBd gain

±45° DualPol

48 inch

SPECIFICATIONS

Electrical

Azimuth Beamwidth	70°
Elevation Beamwidth	16.1°
Gain	11.6 dBd (13.7 dBi)
Polarization	Slant, ±45°
Port to Port Isolation	≥ 20 dB
Front-to-Back Ratio	≥ 25 dB
Electrical Downtilt Options	0°, 5°, 10°
VSWR	1.35:1 Max
Connectors	2;Type N or 7-16 DIN (female)
Power Handling	500 Watts CW
Passive Intermodulation	≤ -147 dBc [2x20W (+43 dBm)]
Lightning Protection	Chassis Ground

Mechanical

Dimensions (L x W x D)	48in x 12in x 7in (121.9 cm x 30.5 cm x 17.8 cm)
Rated Wind Velocity	130 mph (209 kph)
Equivalent Flat Plate Area	4ft² (.37 m²)
Front Wind Load @ 100 mph (161 kph)	115 lbs (512 N)
Side Wind Load @ 100 mph (161 kph)	67 lbs (299 N)
Weight	21 lbs (9.5 kg)

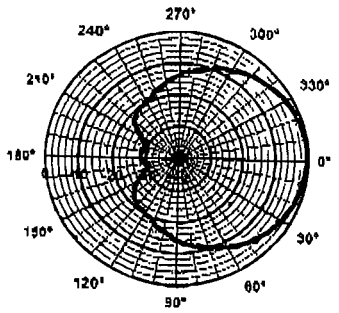
Note: Patent Pending and US Patent number 5, 757, 246.

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.

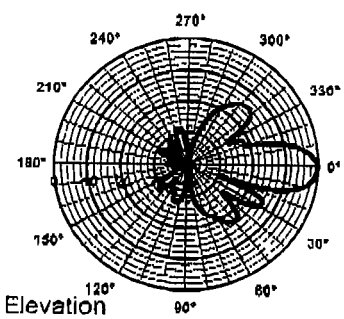
MOUNTING OPTIONS

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"

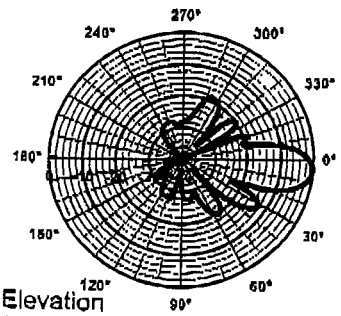
* Model number shown represents a series of products. See mounting options section for specific model number.



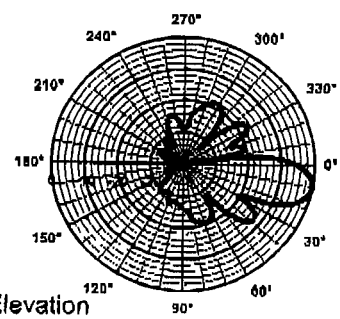
Azimuth



Elevation
0° Downtilt



Elevation
5° Downtilt



Elevation
10° Downtilt

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