

## 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

July 25, 2003

Paul T. Tusch, Esq. Cacace, Tusch & Santagata 777 Summer Street P.O. Box 15859 Stamford, CT 06901-0859

RE:

TS-SPRINT-126-030711 - Sprint Spectrum, L.P. request for an order to approve tower sharing at an existing telecommunications facility located at Oliver Terrace (70 Platt Road), Shelton, Connecticut.

## Dear Attorney Tusch:

At a public meeting held July 22, 2003, 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 July 10, 2003.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.

onla B. holy

Chairman

PBK/laf

 c: Honorable Mark A. Lauretti, Mayor, City of Shelton Richard Schultz, Planning Administrator, City of Shelton Christopher B. Fisher, Esq., Cuddy & Feder LLP Thomas F. Flynn III, Nextel Communications



## Attorneys at Law

777 Summer Street P.O. Box 15859 Stamford, Connecticut 06901-0859

(203) 327-2000 Facsimile (203) 353-3392 www.lawcts.com

Greenwich Office: 124 West Putnam Avenue Greenwich, Connecticut 06830

e.mail:

LMCGEACHY@LAWCTS.COM

## VIA OVERNIGHT DELIVERY

Mr. S. Derek Phelps **Executive Director** Connecticut Siting Council Ten Franklin Square New Britain, Connecticut 06051 July 10, 2003



CONNECTICUT SITING COUNCIL

MICHAEL J. CACACE\* MARK P. SANTAGATA PAUL T. TUSCH RICHARD S. FISHER RONALD E. KOWALSKI, II SHERWOOD R. SPELKE JANE W. FREEMAN JUDITH ELLENTHAL KATHERINE T. BLAKESLEE EDWARD F. NEMCHEK\* ALICE ANN FITZPATRICK PATRICK L. POESCHL\* LAURA A. McGEACHY\* JOSEPH T. PUHEKKER\*+ DAVID J. COVIELLO BARBARA S. KOTEEN\* JESSICA HUHN-KENZIK OF COUNSEL

LEGAL ASSISTANTS EVA LEE CHAN CYNTHIA L. MAMMONE DONNA A. SIMMONS

ERIC D. GRAYSON\*

\*ALSO ADMITTED IN NEW YORK \*ALSO ADMITTED IN LOUISIANA

Request by Sprint Spectrum, L.P. for an Order to Approve the Shared Use of a Tower Facility to be located at Oliver Terrace (70 Platt Road), Shelton,

Dear Mr. Phelps:

Enclosed is an original and twenty (20) copies of Sprint Spectrum L.P.'s Tower Sharing Application for filing with the Siting Council pursuant to Connecticut General Statutes § 16-

Enclosed is a check in the amount of five hundred dollars (\$500.00) payable to the Siting Council for the filing fee for processing this application in accordance with Connecticut General Statutes §16-50v and §16-50v-1a of the Regulations of Connecticut State Agencies.

I understand from your staff that this matter will be placed on the July 22, 2003 meeting agenda. If you have questions regarding Sprint's proposal, please do not hesitate to contact me or Attorney Paul Tusch at the above number.

Very truly yours,

Laura A. McGeachy

PTT/la Enclosure

Robert Chagnon, Sprint Spectrum L.P. F:\docs\PNZ\jj3710let.spr



## Attorneys at Law

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Greenwich Office: 124 West Putnam Avenue Greenwich, Connecticut 06830

e.mail:

PTUSCH@LAWCTS.COM

## **VIA OVERNIGHT DELIVERY**

Pamela B. Katz, Chairperson Connecticut Siting Council Ten Franklin Square New Britain, Connecticut 06051 July 10, 2003



CONNECTICUT SITING COUNCIL

MICHAEL J. CACACE\* MARK P. SANTAGATA PAUL T. TUSCH RICHARD S. FISHER RONALD E. KOWALSKI, II SHERWOOD R. SPELKE JANE W. FREEMAN JUDITH ELLENTHAL KATHERINE T. BLAKESLEE EDWARD F. NEMCHEK\* ALICE ANN FITZPATRICK PATRICK L. POESCHL\* LAURA A. McGEACHY\* JOSEPH T. PUHEKKER++ DAVID J. COVIELLO BARBARA S. KOTEEN\* JESSICA HUHN-KENZIK

OF COUNSEL ERIC D. GRAYSON\*

legal assistants Eva Lee Chan Cynthia L. Mammone Donna A. Simmons

\*ALSO ADMITTED IN NEW YORK \*ALSO ADMITTED IN LOUISIANA

Re: Request for Tower Sharing approval per C.G.S. §16-50aa

Applicant: Sprint Spectrum, L.P. co-location on

AT&T Wireless PCS, LLC approved tower

Location: Oliver Terrace (70 Platt Road), Shelton

## Dear Chairperson Katz:

Pursuant to Connecticut General Statutes (C.G.S.) §16-50aa, Sprint Spectrum, L.P. (Sprint) hereby requests an order from the Connecticut Siting Council (Council) to approve the proposed shared use by Sprint of an approved tower facility located at Oliver Terrace, Shelton, Connecticut.

Sprint proposes to install PCS antennas and related equipment at the tower facility to be owned and operated by AT&T Wireless PCS, LLC (AT&T). Sprint has an agreement with AT&T to install its antennas on its tower and an agreement with Brennan Realty, LLC to place its ground equipment on its property at Oliver Terrace, Shelton, Connecticut.

On March 25, 2003, the Council issued a Declaratory Ruling regarding AT&T's Petition (#608T), that no Certificate of Environmental Compatibility and Public Need was required for the proposed replacement and relocation of an existing telecommunications tower at 70 Platt Road, Shelton, Connecticut. AT&T's 100' replacement tower is presently slated to accommodate three carriers: AT&T, Nextel and Sprint.

Sprint respectfully requests that the Council find that the proposed shared use of the tower facility satisfies the criteria set forth in C.G.S. §16-50aa, and that it issue an order approving the proposed shared use for the reasons more fully detailed below.

# **BACKGROUND AND PUBLIC NEED:**

Sprint, a telecommunications venture, acquired wireless licenses from the Federal Communications Commission (FCC) in 32 major U.S. trading areas, including Connecticut, to provide PCS technology to a population of 182.4 million people in June 1995. Since its licensing, Sprint has been actively seeking and establishing wireless telecommunications facilities throughout Connecticut. The proposed tower modification is in furtherance of establishing a thorough and efficient Sprint PCS network in Connecticut pursuant to its FCC mandate. A copy of Sprint's FCC license for the New York Market, which includes Connecticut, is attached as Exhibit A.

Sprint's PCS technology, although similar to conventional, analog cellular, has far greater quality and capability. The PCS system is a digital state of the art system which combines answering machine, page, voice mail, text messaging and many other services. This system also allows for increased capacity over analog cellular, which permits it to handle more calls than cellular. Another difference between Sprint's system and traditional cellular is that PCS works on a higher frequency than cellular service and it transmits at lower power than cellular. Because of the low power of the system, a cell site is capable of transmitting to and from PCS phones only within a limited geographic area. A cell site must be located within a prescribed area in order to provide reliable coverage for the entire cell. Although the Telecommunications Act of 1996 has preempted any state or local determination of public need for PCS service, this new cell is needed to provide and/or improve PCS coverage to the City of Shelton and specifically, Route 8 and the surrounding Without the proposed cell site, the coverage in the City of Shelton and the surrounding area would be insufficient to provide reliable wireless service to residents of, businesses in and visitors to Shelton that subscribe to Sprint PCS. Sprint wishes to colocate on AT&T's monopole and share the use of the approved facility to avoid the unnecessary proliferation of towers in the area.

Pursuant to mutually acceptable terms and conditions, Sprint and AT&T have agreed to the proposed use of this tower and Sprint and Brennan Realty, LLC have agreed to the proposed use of a portion of real property for its associated base station equipment. AT&T and Brennan Realty, LLC have authorized Sprint to apply for all necessary permits, approvals and authorizations which may be required for the proposed shared use of this approved tower facility. See Exhibit B.

## **PROJECT DESCRIPTION:**

The proposed PCS facility on the AT&T tower at Oliver Terrace, Shelton, will consist of nine (9) panel directional antennas, three (3) antennas located at three (3) different sectors on one triangular mounting platform with an antenna centerline of 74.5' Above Ground Level (AGL). The proposed antennas for Sectors 1, 2 and 3 are 4.5' EMS Wireless antennas with dimensions of approximately 54" high by 6" wide by 3" deep, and one GPS antenna will be mounted at approximately 60' AGL. The GPS antenna is necessary for the PCS facility to be timed properly. The plans for the site are attached as Exhibit C and the antenna specifications are attached at Exhibit D. The antenna azimuths depicted on the plans are as follows: Sector 1 - 30 degrees, Sector 2 - 120 degrees and Sector 3 -230 degrees. The Sector 1 azimuth listed on the plans is off slightly. The proposed azimuth for the Sector 1 antennas is 20 degrees, not 30 degrees as shown on the plans.

Sprint has leased a 13.5' by 21.5' area from the property owner, Brennan Realty, LLC for the placement of its ground equipment. Within that lease area, Sprint plans on constructing a 9.5' by 18' concrete equipment pad to support its base station equipment. The related equipment consists of four cabinets: two power cabinets and two battery backup units.

# COMPLIANCE WITH C.G.S. §16-50aa:

The tower sharing statute provides that, upon written request for approval of a proposed shared use, "[i]f the council finds that the proposed 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", C.G.S. §16-50aa(c)(1). As set forth below, Sprint can demonstrate that the proposed use of the facility is feasible and that its tower sharing application should be approved:

## A. <u>Technical Feasibility</u>

Sprint's PCS facility and AT&T's tower at Oliver Terrace are designed to withstand any major storm or natural disaster. This PCS facility is designed to meet and exceed the current 85 mph with a one-half (½) inch of radial ice recommended load standards in the State of Connecticut. See Exhibit D. Moreover, the tower will be structurally sound to support the addition of Sprint's proposed antennas as detailed in the structural analysis performed by Dewberry-Goodkind, Inc. which is attached as Exhibit D. Sprint operates its PCS system in accordance with FCC rules and regulations which authorize the use of certain frequencies by wireless carriers so as not to interfere with the transmission of other

radio signals. In the unlikely event that Sprint's signals interrupt or degrade radio or television service in the area, Sprint, by authority of the FCC, is required to and would promptly correct any interference problem that arose. Therefore, the proposed shared use of this tower will be technically feasible.

## B. <u>Legal Feasibility</u>

The legal feasibility for approving Sprint's shared use of AT&T's tower facility at Oliver Terrace, Shelton, is apparent. The legislature has expressed a policy that promoting shared tower use is in the public interest to avoid the unnecessary proliferation of towers provided that all of the feasibility requirements are met, see C.G.S. §16-50aa(a) and §16-50g. The legislature has given force to that policy statement by requiring the Council to issue an order approving a shared use of a tower facility if it is technically, legally, environmentally and economically feasible and meets public safety concerns according to C.G.S. §16-50aa(c)(1).

When considering requests for shared use of tower facilities, the Council is directed to give such consideration to other state laws and municipal regulations as it deems appropriate, C.G.S. §50-x(a). The Council has the authority under §16-50p(b)(1)(A), to require telecommunications carriers that apply for a Certificate of Environmental Compatibility and Public Need to share an existing tower facility if feasible, prior to granting certification for a facility. That section further buttresses the legal feasibility for the Council to approve Sprint's tower sharing application. Fortunately, it is feasible for Sprint to co-locate its facility on AT&T's approved tower which obviates the need for Sprint to construct its own tower in the vicinity of Oliver Terrace, Shelton. This proposed shared use is consistent with the public interest to avoid the unnecessary proliferation of towers.

## C. <u>Environmental Feasibility</u>

Sprint's proposed use of AT&T's tower would not have a substantial adverse environmental effect to the property at Oliver Terrace, Shelton. The proposed facility once installed, would have an insignificant visual impact to the surrounding area. An addition of a triangular platform with nine (9) antennas underneath AT&T Wireless' and Nextel's antenna platforms and the addition of a 9.5' by 18' concrete pad for four (4) equipment cabinets adjacent to the tower and existing building will not cause any significant change or alteration to the physical appearance or environmental characteristics of the tower site. See Exhibit C.

The height of the approved 100' tower will not be increased by Sprint. Sprint's antennas are proposed to be installed with an antenna centerline of 74.5' AGL. AT&T's tower will not require any structural modification to support the proposed PCS antennas as further explained by Exhibit D.

Sprint's facility will not increase the noise levels of the approved tower facility by six decibels or more. Sprint's plans show that battery backup units will be installed in the event of any power outage. A generator is not proposed at the site. The facility will be powered with 200 amp electrical service and it will have battery back-up capability for short term power outages. The proposed facility will be unmanned, but Sprint personnel will visit the site approximately once a month for equipment checks and routine maintenance. Since there will be no permanent employees at the site, there is no need for water or sewer facilities. The existing driveway will provide site access.

Most importantly, Sprint's proposed antennas' emissions will not increase the total radio frequency electromagnetic radiation power density measured from the tower base, to or above the ANSI standard adopted by the State Department of Environmental Protection and codified in Connecticut General Statutes §22a-162.

A Sprint radio frequency engineer calculated power density and the percent of the Maximum Permissible Exposure (MPE) for this tower site assuming the worst case scenario. This worst case analysis is based on assumptions that the proposed antennas would be operating at full transmission capacity while they were pointing directly at the ground. Sprint's PCS antennas were determined hypothetically to emit 23.81% of the MPE. The cumulative MPE factoring in the potential emissions from AT&T's and Nextel's antennas is 36.63%. This fraction of the MPE is well below the applicable ANSI standards and FCC requirements. The power density analysis and other RF engineering information is attached as Exhibit E.

# D. <u>Economic Feasibility</u>

Sprint and AT&T and Brennan Realty, LLC have negotiated mutually beneficial agreements to allow the use of the approved tower with business terms agreed to between the parties. These agreements were for fair consideration so the proposed tower sharing is therefore, economically feasible.

# E. <u>Public Safety Concerns</u>

AT&T's tower will be structurally capable of supporting the addition of Sprint's proposed antennas. Both Sprint and AT&T conducted a structural analysis of the tower. Sprint's structural analysis is attached at Exhibit D.

Public safety would be enhanced by the addition of Sprint's facility at Oliver Terrace, Shelton. In the event of catastrophic events such as, hurricanes, tornadoes, ice storms, etc, the back-up power source will ensure that local emergency service agencies as well as the general public who subscribe to Sprint PCS, will have emergency communications services during such events. Therefore, the proposed shared use of this facility would improve public safety in the Shelton area.

## **CONCLUSION:**

For the foregoing reasons, Sprint respectfully submits that the proposed shared use of the approved telecommunications tower facility at Oliver Terrace satisfies the criteria set forth in C.G.S. §16-50aa, and advances the legislative goal of preventing the unnecessary proliferation of towers in Connecticut. Therefore, Sprint respectfully requests that the Council grant an order approving the proposed shared use of AT&T's tower facility in Shelton.

Very truly yours

Paul T. Tusch

PTT/lam Attachments

cc:

The Honorable Mark A. Lauretti Robert Chagnon, Sprint Spectrum, L.P.

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## Federal Communications Commission

# RADIO STATION AUTHORIZATION

## Commercial Mobile Radio Services Personal Communications Service - Broadband

WIRELESSCO, L.P. 9221 Ward Parkway Kansas City, MO 64114 Call Sign:

KNLF204

Market:

LOOM

NEW YORK

Channel Block:

File Number:

00001-CW-L-95

The licensee hereof is authorized, for the period indicated, to construct and operate radio transmitting facilities in accordance with the terms and conditions hereinafter described. This authorization is subject to the provisions of the Communications Act of 1934, as amended, subsequent Acts of Congress, international treades and agreements to which the United States is a signatory, and all pertinent rules and regulations of the Federal Communications Commission, contained in the Tide 47 of the U.S. Code of Federal Regulations,

Five-year Build Out Date . . . . . . . . . . . . . . . . June 23, 2000

## CONDITIONS:

Pursuant to Section 309(h) of the Communications Act of 1934, as amended, (47 U.S.C. § 309(h)), this license is subject to the following conditions: This license does not vest in the licensee any right to operate a station nor any right in the use of frequencies beyond the term thereof nor in any other manner than authorized herein. Neither this license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended (47 U.S.C. § 151, et seq.), This license is subject in terms to the right of use or control conferred by Section 706 of the Communications Act of 1934, 23 amended (47 U.S.C. § 606).

Conditions conditued on Page Z.

## WAIVERS:

No waivers associated with this authorization.

Issue Date: June 23, 1995

FCC Form 463a

Page 1 of 2

## CONDITIONS:

This authorization is subject to the condition that, in the event that systems using the same frequencies, as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to climinate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries,

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Fart I of the Commission's rules, 47 C.F.R. Part I.

Issue Date: June 23, 1995

m., ~ ./



## STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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July 25, 2003

Paul T. Tusch, Esq. Cacace, Tusch & Santagata 777 Summer Street P.O. Box 15859 Stamford, CT 06901-0859

RE:

TS-SPRINT-126-030711 - Sprint Spectrum, L.P. request for an order to approve tower sharing at an existing telecommunications facility located at Oliver Terrace (70 Platt Road), Shelton, Connecticut.

## Dear Attorney Tusch:

At a public meeting held July 22, 2003, 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 July 10, 2003.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.

Chairman

PBK/laf

 c: Honorable Mark A. Lauretti, Mayor, City of Shelton Richard Schultz, Planning Administrator, City of Shelton Christopher B. Fisher, Esq., Cuddy & Feder LLP Thomas F. Flynn III, Nextel Communications

## LETTER OF AUTHORIZATION

To: Connecticut Siting Council

Re: Sprint's Tower Sharing Application for the proposed shared use of the replacement telecommunications tower located at 70 Platt Road/Oliver Terrace, Shelton, CT

I, THOURS C. MUBLICALD, having authority to do so on behalf of AT&T Wireless PCS, LLC, does hereby authorize Sprint Spectrum, L.P. and its representatives, as Owner's agent for the purpose of completing and/or filing any application, petition or any document useful or necessary in obtaining approval or a declaratory ruling, required to provide Sprint Spectrum, L.P. with lawful access to, and the ability to use the new telecommunications tower and tower compound area for the purpose of installing, erecting, or otherwise placing antennas, support structures and related equipment at the site. On March 25, 2003, pursuant to Petition No. 608T, AT&T Wireless PCS, LLC received a declaratory ruling from the Council that it could replace and relocate the existing telecommunications tower at the above referenced site.

AT&T Wireless PCS, LLC, shall fully cooperate with Sprint Spectrum, L.P. and its agents in obtaining any required approval or declaratory ruling. Sprint Spectrum, L.P. shall be solely responsible for all cost, filing fees, or any other expense incurred in connection with securing such approval or declaratory ruling.

A copy of this letter shall be regarded as having the same effect as the original.

By: Name: Monas Alexander Alexan

## LETTER OF AUTHORIZATION

To: Connecticut Siting Council

Des Consisted Toward Sharing Application for the proposed shared use of the replacement

Re: Sprint's Tower Sharing Application for the proposed shared use of the replacement telecommunications tower located at 70 Platt Road/Oliver Terrace, Shelton, CT

I, DAVID Brean, having authority to do so on behalf of Brennan Realty, LLC, do hereby authorize Sprint Spectrum, L.P. and its representatives, as Owner's agent for the purpose of completing and/or filing any application, petition or any document useful or necessary in obtaining approval or a declaratory ruling, required to provide Sprint Spectrum, L.P. with lawful access to, and the ability to use the new replacement telecommunications tower and tower compound area for the purpose of installing, erecting, or otherwise placing antennas, support structures and related equipment at the site. On March 25, 2003, pursuant to Petition No. 608T, AT&T Wireless PCS, LLC received a declaratory ruling from the Council that it could replace and relocate the existing telecommunications tower at the above referenced site.

Brennan Realty, LLC, shall fully cooperate with Sprint Spectrum, L.P. and its agents in obtaining any required approval or declaratory ruling. Sprint Spectrum, L.P. shall be solely responsible for all cost, filing fees, or any other expense incurred in connection with securing such approval or declaratory ruling.

A copy of this letter shall be regarded as having the same effect as the original.

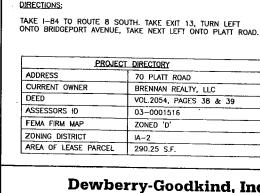
By:

Brennan Realty, LLC

Name: 1 Auid Brennag

Title: Member

Date: 9 3 2003





# SHELTON **OLIVER TERRACE** SHELTON, CONNECTICUT CT43XC864

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

PROJEC	T DIRECTORY
ADDRESS	70 PLATT ROAD
CURRENT OWNER	BRENNAN REALTY, LLC
DEED	VOL.2054, PAGES 38 & 39
ASSESSORS ID	03-0001516
FEMA FIRM MAP	ZONED 'D'
ZONING DISTRICT	IA-2
AREA OF LEASE PARCEL	290.25 S.F.

# Dewberry-Goodkind, Inc.

59 Elm Street, Suite 101 New Haven, CT 06510 f. (203) 776-2288

Engineers Planners Surveyors

# SITE LOCATION SHELTON, CT

LOCATION MAP

ONE INTERNATIONAL BOULEVARD, SUITE 800 MAHWAH, NJ 07495 (201) 684-4085

### PROJECT DESCRIPTION:

THE PROJECT CONSISTS OF INSTALLATION AND OPERATION OF ANTENNAS AND ASSOCIATED EQUIPMENT. THE ASSOCIATED CABINETS WILL BE LOCATED ON A CONCRETE SLAB WITH OUTDOOR COUPMENT CABINETS. THIS SYSTEM WILL BOTH TRANSMIT AND RECEIVE RADIO SIGNALS.

POWER AND TELCO UTILITIES NECESSARY FOR THIS FACILITY WILL BE INSTALLED UNDERGROUND. NO WATER OR SEWER SERVICES

THE PROPOSED USE DOES NOT REQUIRE FULL—TIME OR PART—TIME EMPLOYEES AT THE SITE.

ELECTRIC UTILITY; UNITED ILLUMINATION CO. "CALL BEFORE YOU DIG" (800) 922-4455

IELEPHONE UTILITY: SOUTHERN NEW ENGLAND TELEPHONE (SNET)

## SHELTON

OLIVER TERRACE SHELTON, CT CT43XC864



# Sprint Spectrum LP

HARTFORD MTA

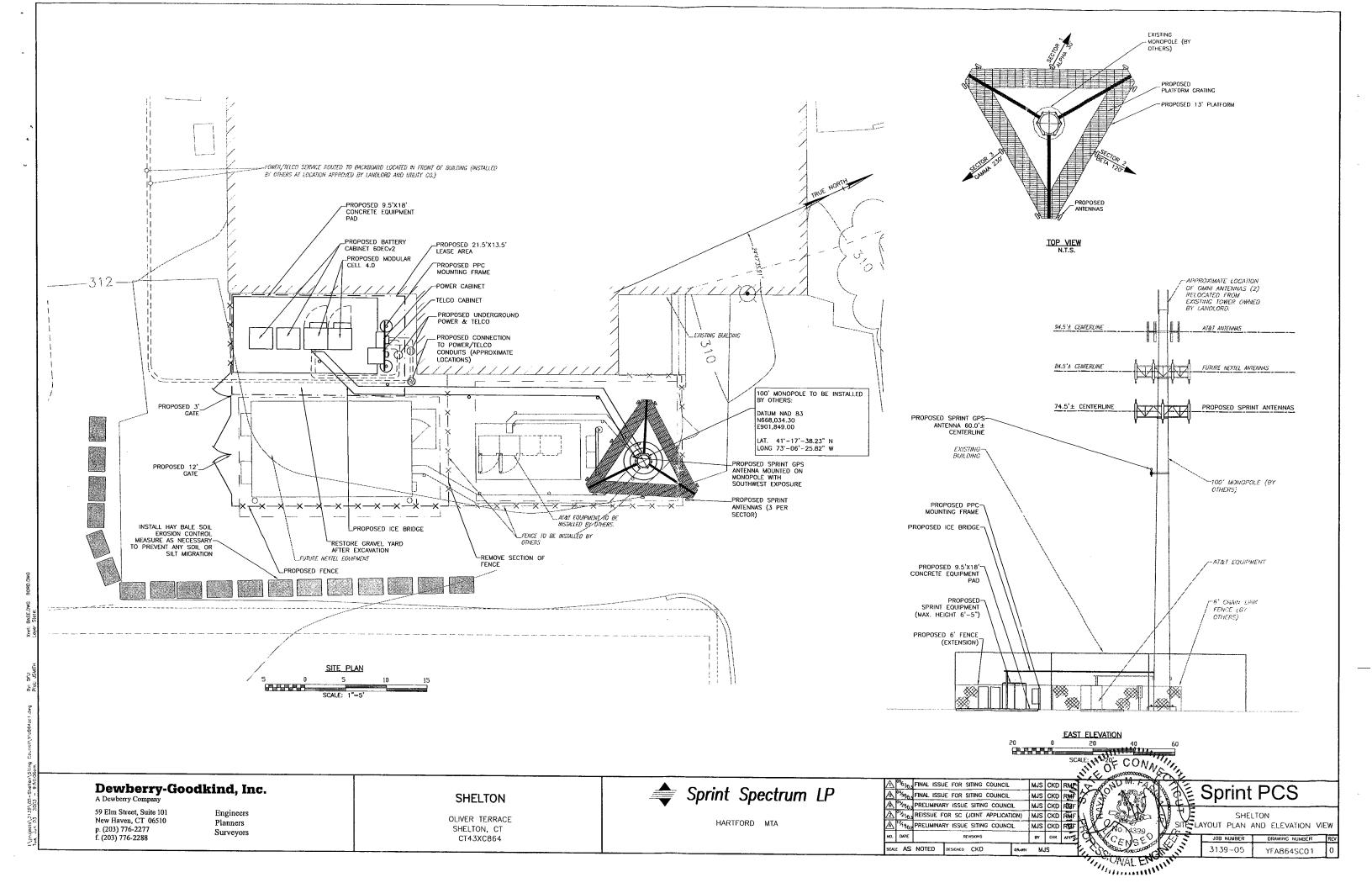
NO.	DATE		RE	VISIONS		BY	СНК	APP'D
		REVISIONS						
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<u> </u>	<sup>2</sup> 1/03	REISSUE F	FOR SC (	JOINT APPLI	CATION)	MJS	CKD	RME
	29/03	PRELIMINARY ISSUE SITING COUNCIL REISSUE FOR SC (JOINT APPLICATION)			MJS	CKD	RMF	
$\triangle$	30/63	FINAL ISSUE FOR SITING COUNCIL				MJS	CKD	RMC
	**************************************	FINAL ISSU	JE FOR S	SITING COUN	CIL	MJS	CKD	RMF

# DRAWING INDEX YFA864TO TITLE SHEET YFA864SCA O STELLAYOUT PLAN AND ELEVATION VIEW

Sprint PCS SHELTON

TITLE SHEET

3139-05 YFA864T01



# Sprint RF Engineering Document for AT&T Monopole, Shelton, CT

# RF Engineering Information For Proposed Oliver Terrace Site, Shelton

Introduction — Sprint PCS provides a digital communications service using PCS technology in the 1900 MHz frequency band as allocated by the FCC. This frequency is over twice the operating frequency of traditional cellular service that is in the 800 MHz band. The higher 1900 MHz signals degrade quickly in hilly areas and areas of dense foliage. Sprint PCS currently lacks coverage in critical areas of Shelton, particularly along State Hwy 8 and the surrounding area. To fill these coverage gaps, we are proposing to collocate on the planned AT&T Wireless replacement tower at 70 Platt Road in Shelton, CT. Utilizing this monopole will allow Sprint PCS to collocate its antennas on the tower at a centerline of 74.5 feet. The following table details the site specifications:

Site Name	Site Address	Latitude	Longitude:	Elevation	Antenna Height
Shelton	70 Platt Road	41° 17' 38.02"	73° 06' 22.56"	279 Feet AMSL	74.5 Feet AGL
Shelton	70 Platt Road	41° 17' 38.02"	73° 06' 22.56"	279 Feet AMSL	74.5 Feet AGL

**Site Need** – The purpose of the proposed location is to provide acceptable service to the Shelton area. Primarily due to the terrain characteristics in the surrounding region, Sprint PCS is currently unable to provide acceptable service in this area.

**Site Search and Selection Process** - To find a site that provides acceptable service and fills the gaps in coverage, computer modeling is used to define a search ring. The search ring is designed such that a site located within the ring would have a high probability of completing coverage in the target areas (assuming that sufficient height is used).

Once the search ring is determined, the Sprint PCS' real estate department searches within the defined area for existing buildings, or non-tower structures of sufficient height that would fill coverage gaps within the network. Sprint PCS was unable to locate any existing building or non-tower structures capable of providing the required coverage. However, a 100' replacement tower was identified that could provide the required coverage. Not all sites submitted had the potential to achieve the coverage objectives. Below is a table of alternative site candidates to 70 Platt Road that were considered and rejected.

**Table 2: Alternate Candidates** 

Site Name	Address	Candidate Evaluation
Oliver Terace	70 Platt Road	Proposed Candidate. Collocation on AT&T 100' replacement tower.
Cablevision Tower	19 English Lane	This candidate provided comparable coverage to the proposed site and was ranked second.
Shelton Scientific	230 Longhill Crossroad	This site would provide comparable coverage to the proposed candidate but was later withdrawn by Sprint Site Acquisition. Sprint PCS elected to pursue the AT&T replacement tower versus constructing a new tower.
Pitney Bowes	27 Waterview Drive	The drive test data for this site showed the coverage objectives of the search area were not met. This site was rejected.
California Closet	2 Mountainview Drive	Candidate did not meet the search area coverage objectives and was therefore rejected.

**Transmitters, Antennas and Power Density** - The base station equipment will be a Lucent PCS mod-cell. The primary RF components related to power density consist of RF amplifiers and antennas. The transmit frequency range will be 1950-1965 MHz. The maximum power generated by the RF amplifiers is 16 watts per carrier with a maximum of 11 carriers per sector. The final maximum power density is determined primarily by the height and type of antenna used. Calculations for maximum power density are described below.

**Power Density Analysis -** The Personal Communications Services (PCS) transmitting systems to be used at the site operate in the range of frequencies subject to FCC Regulation. This is the PCS B-Band, and transmits at 1950-1965 MHz.

The Sprint PCS transmitting antennas will be located at an antenna centerline of 74.5 Feet AGL. This site will consist of 3 sectors oriented approximately 120 degrees apart, with a maximum of 11 channels transmitting per sector. Therefore, as many as 33 Sprint PCS channels can be transmitted at this site.

The FCC radio frequency exposure guidelines require PCS operators to comply with the exposure criteria established by the National Council on Radiation Protection and Measurements (NCRP). Calculations have been made using conservative methods consistent with the FCC's OET Bulletin 65, and use 1.0 mW/cm^2, which is the maximum permissible exposure as specified by NCRP for PCS carriers.

The following table shows the calculated power density and the percent of the Maximum Permissible Exposure (MPE) assuming the ERP is equal in all directions. In other words, no power-level adjustments were made due to the vertical or horizontal pattern of the antennas, and the full 219.8 watts per channel was assumed to be focused at each calculated location, which will result in calculated values being significantly higher than actual levels. Using this method, the highest power density is at the base of the tower, which is the closest accessible point to the antennas. For the proposed

100 foot replacement tower at 70 Platt Road, Shelton, CT, the power density for the Sprint PCS antennas is  $.23814 \,$  mW/cm<sup>2</sup> and the MPE is 23.81%, which is very low compared to the NCRP standard.

Table 3

Worst Case Power Density Analysis of Sprint PCS Antennas @ Base of Tower. Assumes Max ERP & No Antenna Pattern Adjustment.									
Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm²)#	Maximum Permissable Exposure*	%МРЕ	
1962.5	11	333.8	3672	74.5	0	0.238146	1.000	23.815%	
1962.5	11	333.8	3672	74.5	50	0.164190	1.000	16.419%	
1962.5	11	333.8	3672	74.5	100	0.085000	1.000	8.500%	
1962.5	. 11	333.8	3672	74.5	150	0.047121	1.000	4.712%	
1962.5	11	333.8	3672	74.5	200	0.029018	1.000	2.902%	
1962.5	11	333.8	3672	74.5	250	0.019423	1.000	1.942%	
1962.5	11	333.8	3672	74.5	300	0.013833	1.000	1.383%	
1962.5	11	333.8	3672	74.5	350	0.010322	1.000	1.032%	
1962.5	11	333.8	3672	74.5	400	0.007984	1.000	0.798%	
1962.5	11	333.8	3672	74.5	450	0.006353	1.000	0.635%	
1962.5	11	333.8	3672	74.5	500	0.005172	1.000	0.517%	

As indicated above, the calculation methods are very conservative. The calculations show that the power density from the proposed site is well below the FCC mandated limits in all locations around the tower even with the conservative assumptions used in the calculations.

The following table shows the cumulative calculated power density and the percentage of the Maximum Permissible Exposure (MPE) from the Sprint PCS, AT&T Wireless and Nextel antennas.

Table 4: Cumulative Power Density Analysis								
Operator	Frequency	Distance	Calculated Power Density	Maximum Permissable Exposure*	Percent of MPE			
	(MHz)	(feet)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	(%)			
Sprint PCS	1962.5	74.5	0.238146	1.000	23.81%			
ATTWS <sup>1</sup>	1945.0	94.5	0.120937	1.000	12.09%			
Nextel Communications <sup>2</sup>	865.438	84.5	0.007260	0.580	0.73%			

## Total Percentage of Maximum Permissible Exposure

36.63%

<sup>&</sup>lt;sup>1</sup> Information From AT&T Wireless 'Antenna System One' Table of Development of Management Plan Dated 3/5/03

Information calculated from typical Nextel installation.

For the proposed site on the replacement monopole at 70 Platt Road, Shelton, CT, the cumulative power density for the three carriers' antennas at the base of the tower is 0.36634 mW/cm<sup>2</sup> or is 36.63% of the MPE.

Forecast of Maximum Capability – Sprint PCS has implemented a digital CDMA network to provide a P.02 grade of service. A P.02 grade of service means that a subscriber of the system will be able to place calls 98 percent of the time during the busiest (peak) hours of the day. During non-peak times, the grade of service will be better than P.02.

Cell sites, which are designed and equipped for a given capacity, will normally operate at much less than capacity during the growth of the system. Accordingly, Sprint PCS actually provides a much better grade of service while traffic in each cell site increases to design loading conditions.

As Sprint PCS digital network evolves Sprint monitors the actual grade of service on a cell site-by-cell site basis. Factors affecting the grade of service are:

- Call attempts
- Call holding time
- Call distribution over time (average and peak)
- Call distribution over geography (Users in weaker coverage areas negatively affect capacity of the cell site)

If the grade of service for any single cell site falls below the desired grade of service, Sprint PCS will take steps to expand its facilities that serve the cell site. Theses steps can include:

- Antenna changes
- Cell site balancing through call processing parameters and power adjustments
- Adding channels

These steps all serve to delay the process of cell site splitting.

Based on the current and projected number of subscribers as well as current and projected usage patterns, it is anticipated that cell site splitting at this location will not be required for at least five years.

**Alternatives** – Sprint PCS provides a digital communications service using PCS technology in the 1900 MHz frequency band as allocated by the FCC. This frequency is over twice the operating frequency of traditional cellular service that is in the 800 MHz band. The higher 1900 MHz signals degrade quickly in hilly areas and areas of dense foliage.

In order to provide adequate service, significant height must be used in order for the cell site to communicate with the mobile and for the mobile to communicate with the cell site. In some cases communication from the cell site to the mobile can be improved by using a higher power at the cell site. However, this approach will not improve communication from the mobile to the cell site.

Common alternatives to monopole technology relevant to CDMA technology include repeaters and microcells. A repeater is a low power system, which receives a signal from an existing site and then amplifies this signal for rebroadcasting in the target area. A microcell is a low power system resembling a small version of a cell site.

These alternative technologies are useful for filling small gaps in coverage or providing service in buildings, but are severely limited by coverage and capacity. The current gap in service is significant; therefore, these alternatives are not sufficient to provide adequate coverage in this area.

Mayor Mark A. Lauretti July 10, 2003 Page Two

Enclosed for your review is a copy of the materials Sprint submitted to the Connecticut Siting Council. If you have any questions regarding Siting Council review, please contact that agency at (860) 827-2935. If you have questions regarding Sprint's proposal, please do not hesitate to contact me at the above number.

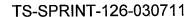
Very truly yours,

Paul T. Tusch

PTT/la Enclosure

cc: Pamela B. Katz, Connecticut Siting Council Robert Chagnon, Sprint Spectrum L.P.

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## Attorneys at Law

777 Summer Street P.O. Box 15859 Stamford, Connecticut 06901-0859

(203) 327-2000 Facsimile (203) 353-3392 www.lawcts.com

Greenwich Office: 124 West Putnam Avenue Greenwich, Connecticut 06830

e.mail:

PTUSCH@LAWCTS.COM

## CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Mayor Mark A. Lauretti City of Shelton, City Hall, Room 202 54 Hill Street Shelton CT, 06484 July 10, 2003



CONNECTICUT SITING COUNCIL

MICHAEL J. CACACE\* MARK P. SANTAGATA PAUL T. TUSCH RICHARD S. FISHER RONALD E. KOWALSKI, II SHERWOOD R. SPELKE JANE W. FREEMAN JUDITH ELLENTHAL KATHERINE T. BLAKESLEE EDWARD F. NEMCHEK\* ALICE ANN FITZPATRICK PATRICK L. POESCHL\* LAURA A. McGEACHY\* JOSEPH T. PUHEKKER\*\* DAVID J. COVIELLO BARBARA Š. KOTEEN+ JESSICA HUHN-KENZIK

OF COUNSEL ERIC D. GRAYSON\*

legal assistants Eva Lee Chan Cynthia L. Mammone Donna A. Simmons

\*ALSO ADMITTED IN NEW YORK \*ALSO ADMITTED IN LOUISIANA

Re: Application to the Connecticut Siting Council Request for Shared Use of a Tower Facility pursuant to Conn. Gen. Stat. § 16-50aa Oliver Terrace (70 Platt Road), Shelton, Connecticut

## Dear Mayor Lauretti:

٧.

Sprint Spectrum, L.P. (Sprint) proposes to install PCS antennas and related equipment at the tower facility to be owned and operated by AT&T Wireless PCS, LLC (AT&T), approved to be built at Oliver Terrace, Shelton. Sprint has applied to the Connecticut Siting Council for an order approving the shared use of the tower facility pursuant to Connecticut General Statutes § 16-50aa.

Sprint's proposed shared use of the tower is consistent with the State of Connecticut legislative finding and purpose of avoiding the unnecessary proliferation of towers by using existing structures wherever feasible. AT&T's monopole is designed to support additional carriers' antennas and, as such, Sprint is seeking approval to co-locate a wireless facility on this tower to be constructed in the near future.

Sprint's proposed antennas will be located on AT&T's tower and the associated equipment cabinets will be contained within a 13.5' by 21.5' lease area adjacent to the tower and the other carriers' equipment pads, as depicted on the site plan.

Should Sprint PCS require additional or improved service in smaller target areas following the collocation on the proposed replacement tower, Sprint PCS would consider these alternatives.

Due to the propagation characteristics of the 1900 MHz signals and the limitations of the alternative technologies, there are no feasible technical alternatives to collocating on the extended tower.

**Proposed Facility** – Sprint proposes to install nine panel antennas in a three-sector array on a triangular platform with the centerline of the antennas at a height of 74.5 Feet. These panel antennas are 60 inches in length and 6 inches wide. The maximum ERP is 334 watts per channel or 3672 watts per sector assuming eleven channels per sector.

Summary – The terrain in Shelton limits both the coverage from existing sites and locations that will work to fill the coverage gaps in Shelton. No other existing structures are available to provide coverage where required. The location and height were chosen to achieve an optimal balance between meeting coverage objectives, reducing the number of antenna sites required in Shelton and minimizing impact on the neighborhood. Without a site in this area a significant gap in service will exist.

Tony Wells RF Design Engineer – Hartford MTA Sprint PCS 59 Elm Street Suite 101 New Haven, Connecticut 06510-2047 203 776 2277 203 776 2288 fax www.dewberry.com

July 9, 2003

Ms. Laura Thoman Sprint PCS 1 International Blvd, Suite 800 Mahwah, NJ 07495

Re:

100 Foot Monopole, Site No. CT43XC864
Oliver Terrace, Shelton, CT - Structural Assessment

Dear Ms. Thoman:

We have completed our structural assessment of the proposed monopole structure to be erected at the above referenced site, to support the proposed Sprint antennas, frames and antenna cables, pursuant to Section 108.1.1 of the Connecticut State Building Code (CSBC). We have reviewed the monopole calculations dated January 24, 2003 prepared by FWT, Inc. of Fort Worth, TX for Bechtel Telecommunications. Section 1609.1 of the CSBC addresses radio and television towers and references Section 3108.4 of the 1996 BOCA Code. The BOCA Code references EIA/TIA 222-E for antenna supporting structures. The FWT analysis of the monopole and determination of foundations is based on the later version of this code, TIA/EIA 222-F, which includes all of the requirements of EIA/TIA 222-E.

The proposed monopole is 100ft high and has been designed to support an array of 6 panel antennas and 2 standard 4ft diameter dish antennas at the top of the pole and 2 arrays of 9 panel antennas on low profile platforms below with 10ft vertical separation. The pole has been designed to resist wind loads generated by a basic wind speed of 85 mph; the CSBC specifies the basic wind speed for Shelton is 80mph.

The proposed Sprint installation will be the lowest on the pole at an elevation of 74.5ft above grade (this is 5.5ft lower than assumed in the analysis.) and will comprise of 9 EMS Wireless panel antennas on low profile platforms. The wind area of the EMS Wireless antenna is 2.3sf, the analysis assumed generic panel antennas of wind area 4.0sf. The structure was analyzed in spreadsheet format using a computer program leased to FWT by Paul J. Ford and Company. The lateral wind loads and the gravity loads were calculated by the program in accordance with the requirements of TIA/EIA 222-F. These loads were used to determine the forces in the monopole sections and the foundation reactions including overturning moment. Hand calculations by Dewberry-Goodkind, Inc. confirmed the results of the computer analysis. The smaller proposed antennas placed lower on the pole will reduce the wind loading stresses in the pole and the associated foundation reactions and overturning moment. Dewberry prepared a foundation design for the pole based on the output of the FWT analysis.

Upon review of the signed and sealed calculations and sketches prepared by FWT. Inc. it is our conclusion that the proposed monopole, and foundations, can safely support the proposed Sprint installation and the design is in compliance with the Connecticut State Building Code.

Should you have any questions, please contact us.

Very truly yours,

Herbert E. Browne, P.E.

Director, Building Structures

Dewberry-Goodkind, Inc.

Dewberry-Goodkind, Inc.

SECTORS 1 & 3 ANTENNAS

## RV65-18-XXDPL2

## Vertical Polarization 1850 MHz - 1990 MHz

# Electrical Specifications

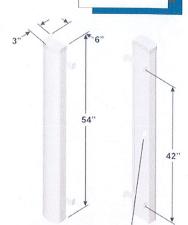
Azimuth Beamwidth (-3 dB)
Elevation Beamwidth (-3 dB)
Elevation Sidelobes (Upper)
Gain
Polarization
Front-to-Back Ratio
Electrical Downtilt Options
VSWR
Connectors
Power Handling
Passive Intermodulation

Lightning Protection

65° 6° ≥ 18 dB 17.8 dBi

17.8 dBi (15.7 dBd) Linear, Vertical ≥ 28 dB (≥ 30 dB Typ.) 0°, 2°, 4°, 6° 1.35:1 Max 1; 7-16 DIN (female) 250 Watts CW

≤ -150 dBc [2 x 20W (+ 43 dBm)] Chassis Ground



**EMS** 

**OptiRange™** 

Suppressor™

Wireless

RF CONNECTOR

## Mechanical Specifications

Dimensions (L x W x D)

Rated Wind Velocity Equivalent Flat Plate Area Front Wind Load @ 100 mph (161 kph) Side Wind Load @ 100 mph (161 kph) Weight 54 in x 6 in x 3 in (137.2 cm x 15.2 cm x 7.6 cm) 150 mph (241 km/hr) 2.3ft² (.21 m²) 65 lbs (288 N) 31 lbs (139 N)



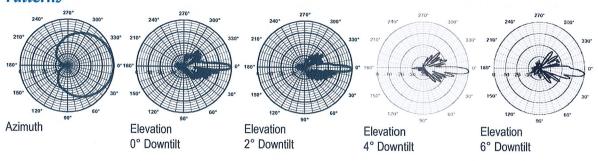
## Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20\*, MTG-CXX-10\*, MTG-C02-10, MTG-TXX-10\*

Note: \*Model number shown represents a series of products. See Mounting Options section for specific model number.

11 lbs (5.0 kg)

## **Patterns**



Note: All weights include mounting brackets. Revised 03/31/03

EMS' antennas are protected by one or more of the following U.S. patents: 5,844,529; 6,067,053; 6,462,710; 6,392,600; 6,069,590; 5,966,102; 5,757,246. EMS' antenna designs may also be covered by pending U.S. patent applications and by pending & awarded international patents.



SECTOR 2 ANTENNAS

## **RV90-17-XXDPL2**

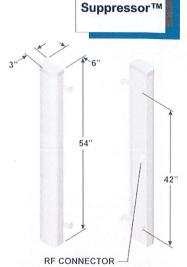
## Vertical Polarization 1850 MHz - 1990 MHz

## **Electrical Specifications**

Azimuth Beamwidth (-3 dB)
Elevation Beamwidth (-3 dB)
Elevation Sidelobes (Upper)
Gain
Polarization
Front-to-Back Ratio
Electrical Downtilt Options
VSWR
Connectors
Power Handling
Passive Intermodulation

Lightning Protection

90°
6°
≥ 18 dB
16.7 dBi (14.6 dBd)
Linear, Vertical
≥ 28 dB (≥ 30 dB Typ.)
0°, 2°, 4°, 6°
1.35:1 Max
1; 7-16 DIN (female)
250 Watts CW
≤ -150 dBc
[2 x 20W (+ 43 dBm)]
Chassis Ground



**OptiRange™** 

## **Mechanical Specifications**

Dimensions (L x W x D)

Rated Wind Velocity Equivalent Flat Plate Area Front Wind Load @ 100 mph (161 kph) Side Wind Load @ 100 mph (161 kph) Weight 54 in x 6 in x 3 in (137.2 cm x 15.2 cm x 7.6 cm) 150 mph (241 km/hr) 2.3ft² (.21 m²) 65 lbs (288 N) 31 lbs (139 N) 11 lbs (5.0 kg)

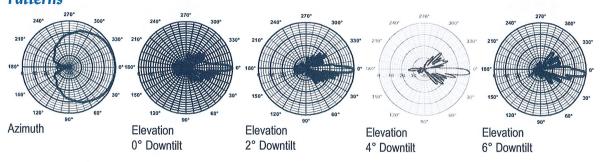


## Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20\*, MTG-CXX-10\*, MTG-C02-10, MTG-TXX-10\*

Note: \*Model number shown represents a series of products. See Mounting Options section for specific model number.

## **Patterns**



Revised 05/16/02



## 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

July 11, 2003

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

RE:

**TS-SPRINT-126-030711** – Sprint Spectrum, L.P. request for an order to approve tower sharing at an existing telecommunications facility located at Oliver Terrace (70 Platt Road), Shelton, Connecticut.

Dear Mr. Lauretti:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for July 22, 2003, at 1:30 p.m. in Hearing Room One, 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

S! Derek Phelps
Executive Director

SDP/ld

Enclosure: Notice of Tower Sharing

c: Richard Schultz, Planning Administrator, City of Shelton