

# CACACE & TUSCH SANTAGATA

EM-SPRINT-057-021209

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December 6, 2002

**RECEIVED**  
DEC - 9 2002

**CONNECTICUT  
SITING COUNCIL**

**VIA AIRBORNE EXPRESS**

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

MICHAEL J. CACACE\*  
MARK P. SANTAGATA  
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EVA LEE CHAN  
CYNTHIA L. MAMMONE  
DONNA A. SIMMONS

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


**Re: Notice of Exempt Modification per R.C.S.A. §16-50j-72(b)(2) or §16-50j-72(c)**  
**Applicant: Sprint Spectrum, L.P. co-location on monopole tower**  
**Location: Greenwich Hospital, 5 Perryridge Road, Greenwich, CT**

Dear Mr. Phelps:

Enclosed is an original and twenty-four (24) copies of Sprint Spectrum L.P.'s Notice of Exempt Modification for filing with the Siting Council in accordance with R.C.S.A. §16-50j-72(b)(2) or §16-50j-72(c).

Also, 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 regulatory exemption in accordance with Connecticut General Statutes §16-50v and §16-50v-1a of the Regulations of Connecticut State Agencies. 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/emc  
Enclosure

cc: Frederick Thomas, Esq., Greenwich Hospital  
Robert Chagnon  
Laura Thoman  
Tony Wells  
Jason Pintek





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### VIA AIRBORNE EXPRESS

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

December 5, 2002

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**Re: Notice of Exempt Modification per R.C.S.A. §16-50j-72(b)(2) or §16-50j-72(c)**  
**Applicant: Sprint Spectrum, L.P. co-location on monopole tower**  
**Location: Greenwich Hospital, 5 Perryridge Road, Greenwich, CT**

Dear Mr. Gelston:

Please accept this correspondence as Sprint Spectrum, L.P.'s (Sprint) notice of intent for an exempt modification to install PCS antennas and associated equipment on and near the municipally approved monopole tower facility at the Greenwich Hospital pursuant to the Regulations of Connecticut State Agencies (R.C.S.A.) §16-50j-72(b)(2) or §16-50j-72(c). A copy of this correspondence is being sent to the First Selectman of Greenwich, the Honorable Richard Bergstresser, in accordance with the notification requirement of R.C.S.A. §16-50j-73, under separate cover by certified mail, return receipt requested.

Sprint proposes to install PCS antennas and related equipment at the tower facility owned by the Greenwich Hospital, 5 Perryridge Road, Greenwich, Connecticut. The Greenwich Hospital, the property owner of a 9.3 acre parcel located at 5 Perryridge Road, Greenwich, Connecticut, received all necessary municipal approvals and permits from the Town of Greenwich for the construction of its 164' monopole tower. The Greenwich Planning and Zoning Commission approved the 164 foot communications monopole tower on February 12, 2002. The Town of Greenwich emergency communications equipment will be located at the top position on the monopole that is also designed to accommodate five telecommunications carriers. Verizon Wireless' antennas will be located with an antenna centerline of 124 feet above the tower base. On October 7, 2002, the Siting Council approved Cellco Partnership d/b/a Verizon Wireless' request for an order to approve tower

Mortimer A. Gelston  
Chairman  
Connecticut Siting Council  
December 5, 2002  
Page 2

sharing at a telecommunications facility at the Greenwich Hospital (TS-VER-057-020919). Sprint's antennas are proposed with an antenna centerline of 154 feet above the tower base plate.

Sprint and the Greenwich Hospital have reached mutually acceptable terms and conditions for the installation of Sprint's PCS facility including antennas on the approved monopole and equipment cabinets within the existing storage room of the staff parking garage at the hospital complex. The Greenwich Hospital has authorized Sprint to act on its behalf to apply for all necessary approvals from the Connecticut Siting Council for Sprint's proposed co-location of a telecommunications facility on its monopole. This letter of authorization is attached at Exhibit A.

#### **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 B.

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, paging, 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 central business district of the Town of Greenwich and the surrounding areas. Without the proposed cell site, the coverage in the Town of Greenwich would be insufficient to provide reliable wireless service to residents of, businesses in, and

Mortimer A. Gelston  
Chairman  
Connecticut Siting Council  
December 5, 2002  
Page 3

visitors to Greenwich that subscribe to Sprint PCS. Sprint wishes to co-locate on the Greenwich Hospital's monopole and share the use of the existing facility to avoid the unnecessary proliferation of towers in the area.

**PROJECT DESCRIPTION:**

The proposed Sprint PCS facility at the Greenwich Hospital at 5 Perryridge Road, Greenwich, will consist of twelve directional panel antennas mounted on a triangular platform attached to the monopole tower and associated base station equipment to be located in the staff garage. The azimuth for the Sector 1 antennas is 30 degrees, the azimuth for the Sector 2 antennas is 150 degrees and the azimuth for the Sector 3 antennas is 290 degrees. The antenna centerline for these antennas will be 154"± above the tower base plate. Detailed project plans including a Title Sheet - Drawing No. T-1; Site Plan - Drawing No. C-1; Compound Plan and Details - Drawing No. C-2; and Tower Elevation and Mounting Details - Drawing No. C-3, are attached as Exhibit C. The proposed PCS antennas are manufactured by Decibel Products. They are approximately 72" long by 6.1" wide by 2.8" deep. One GPS antenna will be mounted to the monopole at approximately 75' above the tower base. The PCS antenna details are listed in the manufacturers' specification sheets attached as Exhibit D.

Sprint also plans to install its associated base station equipment within an approximately 10' by 24' equipment area designated for Sprint. All equipment will be contained within the existing storage area in the Greenwich Hospital staff garage. The related equipment consists of six equipment cabinets: three modular cell cabinets, two battery backup units, one power cabinet and additional PPC cabinets.

Although the proposed facility will be unmanned, Sprint personnel will visit the site at least 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 off of Lake Avenue will provide site access. The facility will be powered with 200 amp electrical service and it will have battery back-up for short term power outages. Back-up power sources are extremely important for site operations during catastrophic events such as hurricanes, tornadoes, ice storms, etc. The back-up power source will ensure that emergency service agencies as well as the general public, will have communications services during such events.

Mortimer A. Gelston  
Chairman  
Connecticut Siting Council  
December 5, 2002  
Page 4

Sprint's facility and the Greenwich Hospital tower at 5 Perryridge Road 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 ( $\frac{1}{2}$ ) inch of radial ice recommended load standards in the State of Connecticut, see Exhibit D. Moreover, the tower is structurally sound to support the addition of Sprint's proposed antennas as detailed in the structural analysis performed by Sprint which is attached as Exhibit E.

**COMPLIANCE WITH R.C.S.A. §16-50j-72(b)(2) or §16-50j-72(c):**

Sprint's proposed modifications at the Greenwich Hospital tower site will not cause a substantial adverse environmental effect since Sprint's facility complies with the four exception criteria set forth in R.C.S.A. §16-50j-72(b)(2) and the fifth exception criteria set forth in §16-50j-72(c). Compliance with either of those regulatory exemption sections enable the Council to acknowledge Sprint's exempt modification.

First, the changes to the existing tower site will not increase the tower height. Greenwich Hospital's tower is approved at 164' above the tower base plate (ATBP). The town's communications equipment were approved by the town to be installed with antenna centerlines of 175'± ATBP; 171'± ATBP; 170.5'± ATBP; 170'± ATBP; and 160'± ATBP. Verizon Wireless's antennas were approved for installation with an antenna centerline of 124'± ATBP. Sprint's antennas are proposed to be installed with an antenna centerline of 154'± ATBP. Greenwich Hospital's tower will not require any structural modification to support the proposed PCS antennas as further explained in Exhibit E.

Second, Sprint's installation of antennas on the tower currently under construction and installation of equipment cabinets within the designated equipment area does not extend the boundaries of the tower site. Sprint has agreed with the Greenwich Hospital to install its antennas on the monopole and its equipment within a 10' by 24' equipment area in the existing staff garage as depicted on Exhibit C, Drawing C-2, Compound Plan and Details. As such, the tower site boundaries will not be extended by Sprint.

Third, Sprint's facility will not increase the noise levels of the existing facility by six decibels or more at the site boundary. Sprint's equipment includes battery backup units as opposed to a permanent generator that would be used in the event of a power outage and all equipment will be located inside an existing storage room of the hospital's staff garage. A letter from an acoustical engineer of Harold L. Mull, Bell and Associates, Inc. is attached

Mortimer A. Gelston  
Chairman  
Connecticut Siting Council  
December 5, 2002  
Page 5

at Exhibit F. The engineer indicated that Sprint's equipment will not increase the ambient noise level by six decibels or more.

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

A Sprint radio frequency engineer calculated power density and the percent of the Maximum Permissible Exposure (MPE) for this tower site. Sprint's PCS antennas were determined to hypothetically contribute 38.54% of the MPE. The cumulative MPE including the potential emissions from the town's communications equipment and Verizon's antennas is 95.08%. This fraction of the MPE is below the applicable ANSI standards and FCC requirements. This analysis is based on the assumption that the proposed antennas would be operating at full transmission capacity. Additionally, antenna pattern attenuation was not considered with the exception of the town's microwave dishes as explained in the attached in the power density analysis report and tables at Exhibit G.

Finally, as indicated above, the Greenwich Hospital has received all municipal zoning approvals and a building permit from the Town of Greenwich to construct its monopole tower that is depicted on the plans at Exhibit C. The Greenwich Planning and Zoning Commission granted the hospital Special Permit and Site Plan Approval (FSP#2233 and SES 01-12) on February 12, 2002, and the Greenwich Planning and Zoning Board of Appeals granted it Special Exception Approval (Appeal #8724) on March 20, 2002, for the construction of the monopole tower at the Greenwich Hospital. In addition, the Greenwich Building Department issued the Greenwich Hospital a Building Permit (2-2683) to permit construction of the tower on September 24, 2002.

Please note, the Greenwich Planning and Zoning Commission listed as a condition of its zoning approval issued to the hospital that additional carriers seeking to co-locate on the monopole will need Planning and Zoning Approval prior to those carriers submitting any applications to the Siting Council. Although Sprint questions the legality of that condition of approval, it obliged and applied to the Town of Greenwich for Site Plan Approval to co-locate a PCS facility on the Greenwich Hospital's monopole which the town granted (FSP#2233.1 and SES 02-07a) on October 28, 2002.

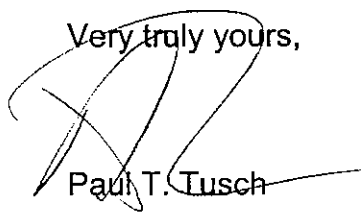


Mortimer A. Gelston  
Chairman  
Connecticut Siting Council  
December 5, 2002  
Page 6

**CONCLUSION:**

For the foregoing reasons, Sprint respectfully submits that its proposed antennas on the Greenwich Hospital's 164 foot telecommunications tower at 5 Perryridge Road and the associated base station equipment constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2) or §16-50j-72(c). Therefore, Sprint respectfully requests a determination that its proposed facility does not have a substantial environmental effect in accordance with R.C.S.A. §16-50j-71, §16-50j-72 and §16-50j-73.

Very truly yours,



Paul T. Tusch

PTT/lam  
Enclosure

cc: Frederick Thomas, Esq., Greenwich Hospital (with exhibits)  
Robert Chagnon (with exhibits)  
Laura Thoman (without exhibits)  
Tony Wells (without exhibits)  
Jason Pintek (without exhibits)

November 30, 2002

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

Re: Letter of Authorization for Sprint Spectrum, L.P. to apply to the  
Connecticut Siting Council to co-locate a PCS facility on a Monopole  
Tower Facility at Greenwich Hospital, 5 Perryridge Road, Greenwich, CT

Dear Mr. Phelps:

I, Frank A. Corvino, the President and CEO of Greenwich Hospital, having authority to do so on behalf of Greenwich Hospital, the Owner of the property located at 5 Perryridge Road in Greenwich, Connecticut, do hereby authorize Sprint Spectrum, L.P. and its representatives, as Owner's agent for the purpose of completing and/or filing an application with the Connecticut Siting Council to approve the co-location of Sprint's proposed telecommunications PCS facility on the Greenwich Hospital's communications monopole tower. Sprint's proposed PCS facility includes installing PCS antennas on the monopole and base station equipment in the Hospital's staff parking garage at its main campus at 5 Perryridge Road, Greenwich, Connecticut.

Sprint Spectrum, L.P. is solely responsible for all cost, filing fees, or any other expense incurred in connection with securing approval from the Connecticut Siting Council.

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

GREENWICH HOSPITAL

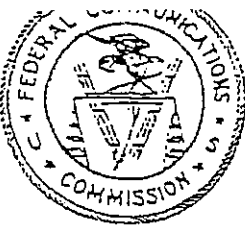
By: 

Name: Frank A. Corvino

Its: President and CEO

Date: November 30, 2002





# 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: M001  
NEW YORK  
Channel Block: B  
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 treaties and agreements to which the United States is a signatory, and all pertinent rules and regulations of the Federal Communications Commission, contained in the Title 47 of the U.S. Code of Federal Regulations.

Initial Grant Date . . . . . June 23, 1995  
Five-year Build Out Date . . . . . June 23, 2000  
Expiration Date . . . . . June 23, 2005

## 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, as amended (47 U.S.C. § 606).

Conditions continued on Page 2.

## WAIVERS :

No waivers associated with this authorization.

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 eliminate 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 Part 1 of the Commission's rules, 47 C.F.R. Part 1.





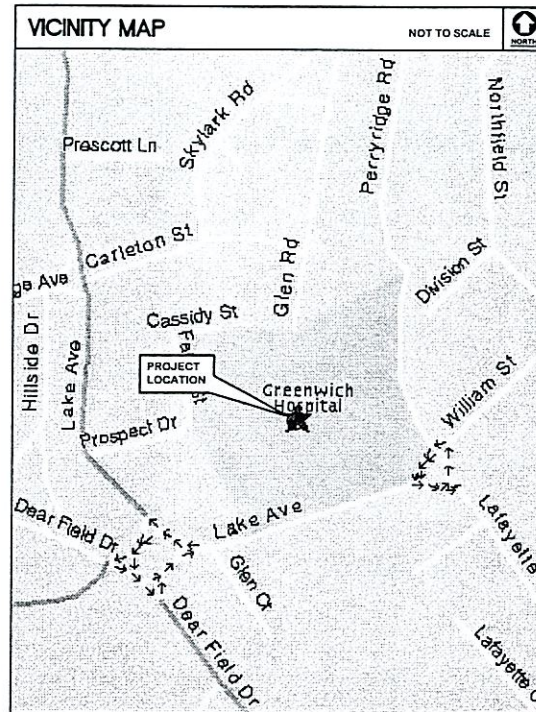
# WIRELESS COMMUNICATIONS FACILITY

## SITE No.: CT43XC855B

### GREENWICH HOSPITAL

### 5 PERRYRIDGE ROAD

### GREENWICH, CONNECTICUT



#### PROJECT SUMMARY

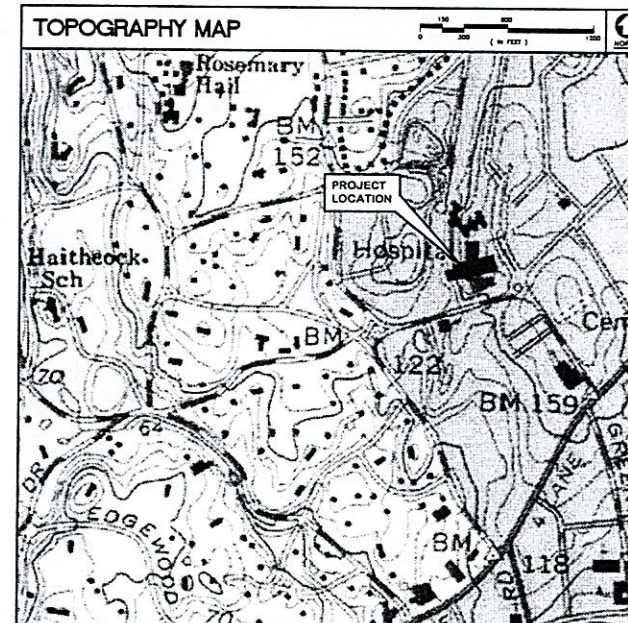
**SITE NAME:** GREENWICH HOSPITAL  
**SITE NUMBER:** CT43XC855B  
**SITE ADDRESS:** 5 PERRYRIDGE ROAD  
GREENWICH, CONNECTICUT  
**PROPERTY OWNER:** GREENWICH HOSPITAL  
5 PERRYRIDGE ROAD  
GREENWICH, CONNECTICUT  
**TENANT:** SPRINT SPECTRUM LP  
1 INTERNATIONAL BLVD., SUITE 300  
MAHWAH, NJ 07495  
**CENTER OF TOWER:** LATITUDE: 41°-02'-02.17" (NAD 83)  
LONGITUDE: 73°-37'-51.00" (NAD 83)  
GROUND ELEVATION: 131.1 A.M.S.L. (NGVD 29)  
\* COORDINATES AND GROUND ELEVATIONS ARE  
BASED ON "TAA 1A CERTIFICATION" PREPARED  
BY MARTINEZ COUCH & ASSOCIATES DATED:  
05/03/02 ON FILE IN TOWN HALL.

#### SITE DIRECTIONS

TAKE I-95 NORTH TO CONNECTICUT. TAKE THE ARCH STREET EXIT #3  
TOWARDS GREENWICH. KEEP LEFT AT THE FORK IN THE RAMP. TURN LEFT  
ONTO ARCH STREET. STAY STRAIGHT TO GO ONTO SOUND VIEW DR. TURN  
RIGHT ONTO FIELD POINT RD. TURN RIGHT ONTO WEST PUTNAM/US-1. TURN  
LEFT ONTO LAFAYETTE PL. ENTER NEXT ROUNDABOUT AND TAKE 2ND EXIT  
ONTO PERRYRIDGE RD.

#### GENERAL NOTES

1. THE SCOPE OF WORK CONSISTS OF SPRINT PCS ANTENNAS MOUNTED ON AN APPROVED 164' MONOPOLE AND EQUIPMENT CABINETS LOCATED IN THE EXISTING PARKING GARAGE.
2. THE ELECTRIC SERVICE WILL ORIGINATE FROM THE ELECTRICAL PANELBOARD IN THE APPROVED EQUIPMENT AREA LOCATED IN THE PARKING GARAGE. THE TELEPHONE SERVICE WILL ORIGINATE FROM THE TELCO DEMARCATION IN THE APPROVED EQUIPMENT AREA LOCATED IN THE PARKING GARAGE.
3. DESIGN OF STRUCTURAL MODIFICATIONS FOR THE INSTALLATION OF THE SPRINT PCS WIRELESS EQUIPMENT CABINETS AND ANTENNA MOUNTS WILL BE INCLUDED IN THE FINAL CONSTRUCTION DOCUMENTS.
4. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 1998 BOCA NATIONAL BUILDING CODE AS MODIFIED BY THE 1999 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EDA 222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES.
5. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
6. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT EXCEPT FOR AN EMERGENCY CONTACT INFORMATION SIGN ON ONE OF THE INTERIOR EQUIPMENT CABINETS.
7. THE ANTENNA PLATFORM WILL BE COMPATIBLE WITH THE ENGINEERED ENDEAVORS (MODEL K10094A) PLAN FOR THE APPROVED MONOPOLE.



#### SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
C-1	SITE PLAN	1
C-2	COMPOUND PLAN AND DETAILS	1
C-3	TOWER ELEVATION AND MOUNTING DETAILS	1



**Natcomm, LLC**  
63-2 North Branford Road  
Branford, Connecticut 06405  
Tel: (203) 488-0580  
Fax: (203) 488-8587

Consulting Engineers - Project Management  
Civil - Structural - Mechanical - Electrical

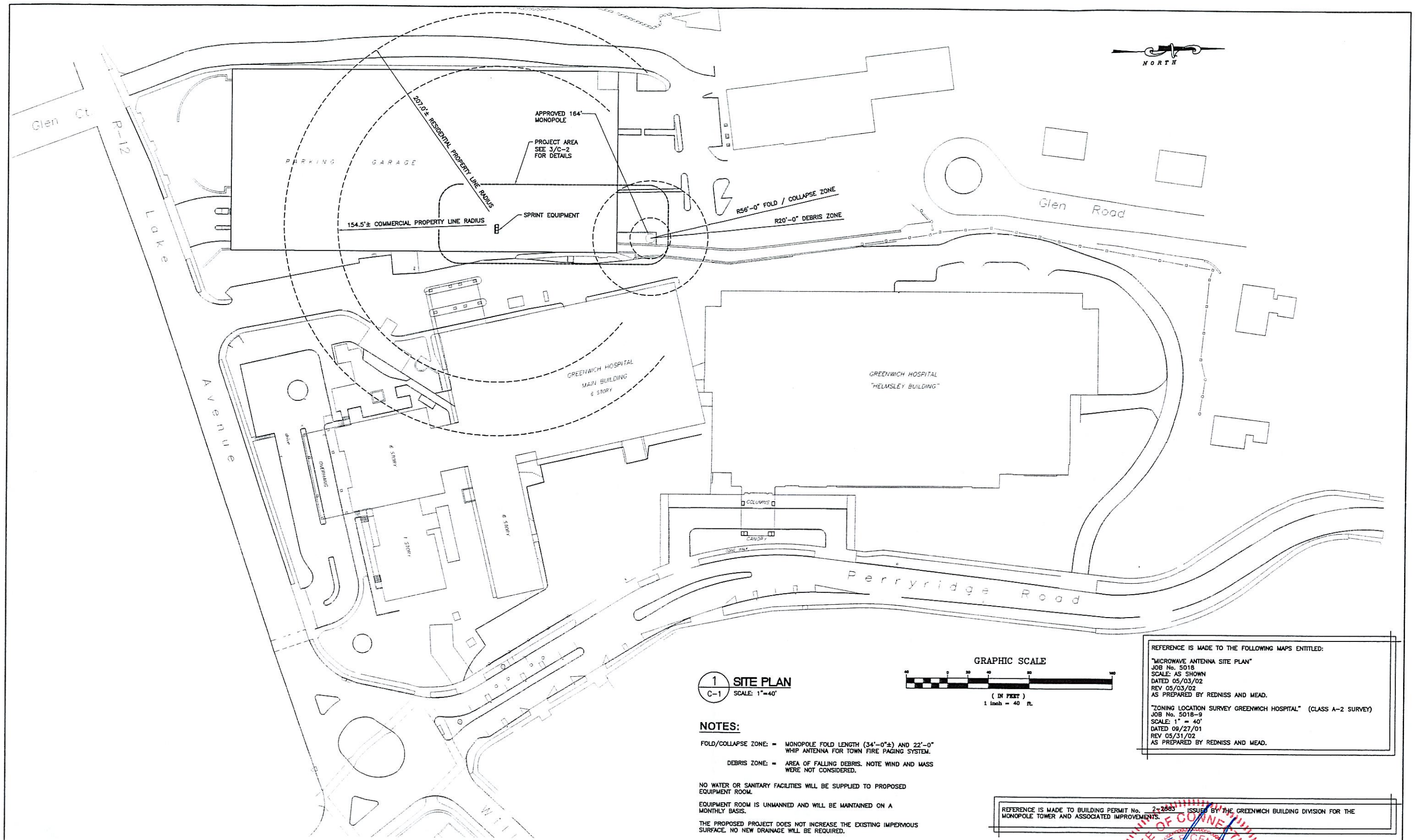
**GREENWICH HOSPITAL**  
5 PERRYRIDGE ROAD  
GREENWICH, CONNECTICUT

SITE NO.: CT43XC855B

**Sprint Spectrum LP**  
1 International Blvd., Suite 300  
Mahwah, NJ 07495

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**1 SITE PLAN**  
C-1 SCALE: 1"=40'

**NOTES:**

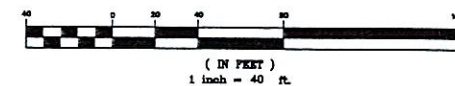
FOLD/COLLAPSE ZONE: = MONOPOLE FOLD LENGTH (34'-0"±) AND 22'-0" WHIP ANTENNA FOR TOWN FIRE PAGING SYSTEM.  
DEBRIS ZONE: = AREA OF FALLING DEBRIS. NOTE WIND AND MASS WERE NOT CONSIDERED.

NO WATER OR SANITARY FACILITIES WILL BE SUPPLIED TO PROPOSED EQUIPMENT ROOM.

EQUIPMENT ROOM IS UNMANNED AND WILL BE MAINTAINED ON A MONTHLY BASIS.

THE PROPOSED PROJECT DOES NOT INCREASE THE EXISTING IMPERVIOUS SURFACE. NO NEW DRAINAGE WILL BE REQUIRED.

**GRAPHIC SCALE**



REFERENCE IS MADE TO THE FOLLOWING MAPS ENTITLED:

"MICROWAVE ANTENNA SITE PLAN"  
JOB No. 5018  
SCALE: AS SHOWN  
DATED 05/03/02  
REV 05/03/02  
AS PREPARED BY REDNISS AND MEAD.

"ZONING LOCATION SURVEY GREENWICH HOSPITAL" (CLASS A-2 SURVEY)  
JOB No. 5018-9  
SCALE: 1" = 40'  
DATED 09/27/01  
REV 05/31/02  
AS PREPARED BY REDNISS AND MEAD.

REFERENCE IS MADE TO BUILDING PERMIT No. 2-2883 ISSUED BY THE GREENWICH BUILDING DIVISION FOR THE MONOPOLE TOWER AND ASSOCIATED IMPROVEMENTS.

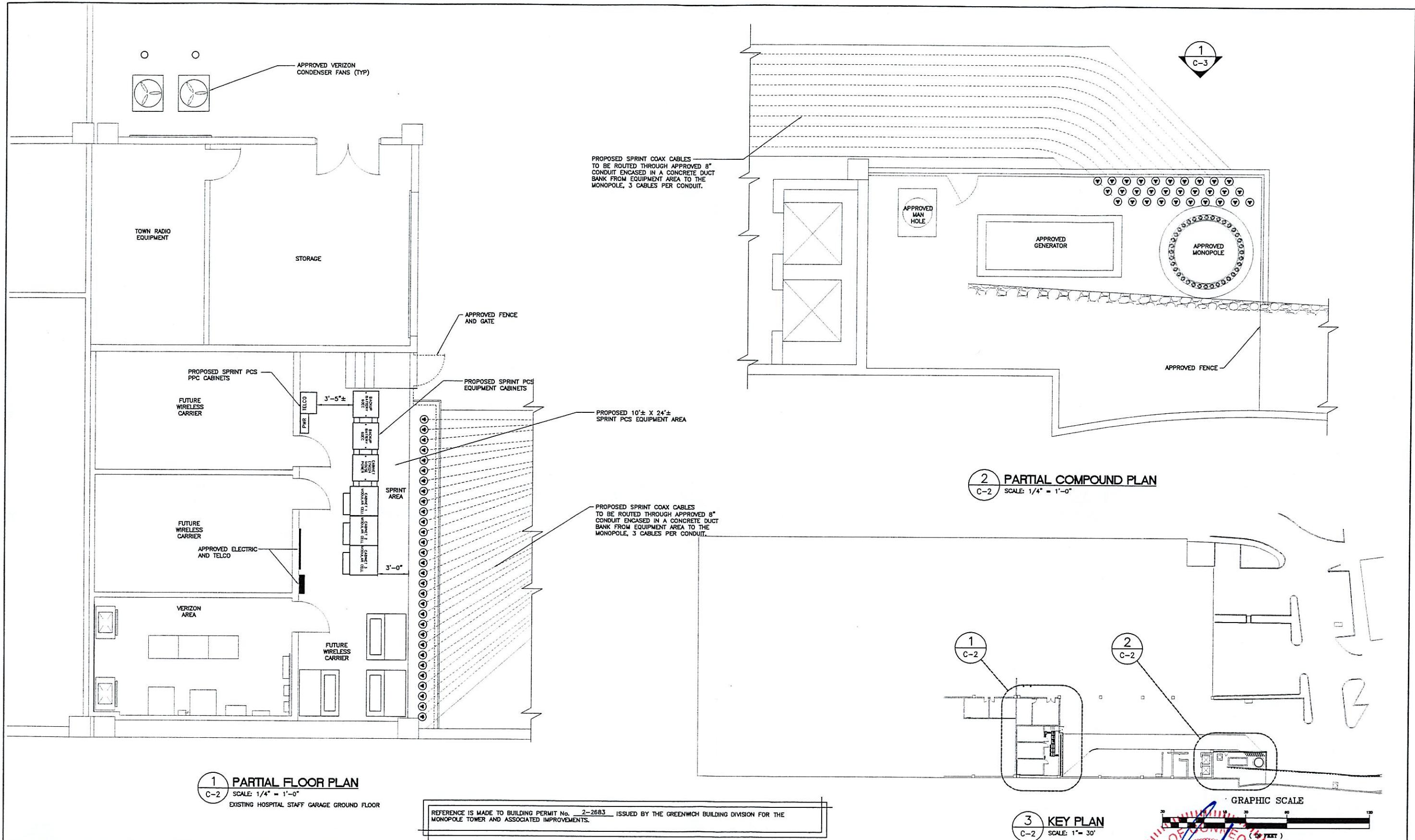
**Natcomm, LLC**  
63-2 North Branford Road  
Branford, Connecticut 06405  
Tel. (203) 488-0580  
Fax (203) 488-8587  
Consulting Engineers-Project Management  
Civil-Structural-Mechanical-Electrical

**GREENWICH HOSPITAL**  
5 PERRYBRIDGE ROAD  
GREENWICH, CONNECTICUT  
SITE NO.: CT43XC855B

**Sprint Spectrum LP**  
1 International Blvd.~Suite 300  
Mahwah, NJ 07495

NO.	DATE	REVISIONS	BY	CHK	APPRV.
1	11/15/02	ISSUED FOR SITING COUNCIL	CMS	JJP	CPC
2	10/24/02	ISSUED FOR SITING COUNCIL REVIEW	CMS	JJP	CPC
DRAWN BY: P.A.M. CHECKED BY: JJP SCALE: AS NOTED DATE: 08/23/02					
<div> </div>					
JOB NO. 02591			DRAWING NUMBER C-1		REV. 1





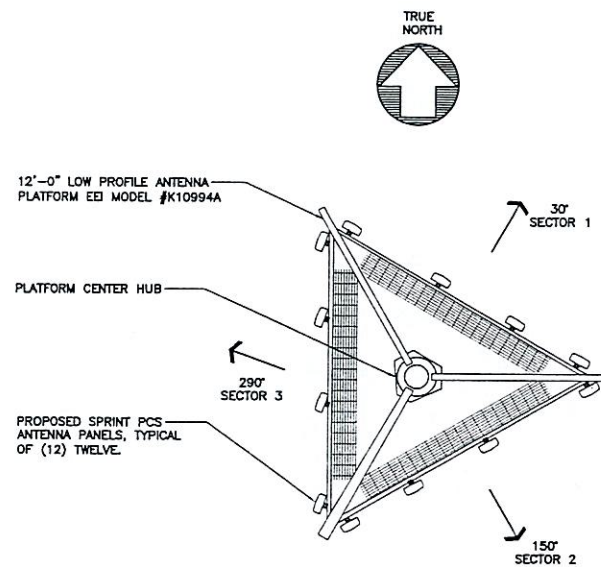
**Natcomm, LLC**  
63-2 North Branford Road  
Branford, Connecticut 06405  
Tel: (203) 488-0580  
Fax: (203) 488-8587  
Consulting Engineers - Project Management  
Civil - Structural - Mechanical - Electrical

**GREENWICH HOSPITAL**  
5 PERRYBRIDGE ROAD  
GREENWICH, CONNECTICUT  
SITE NO.: CT43XC855B

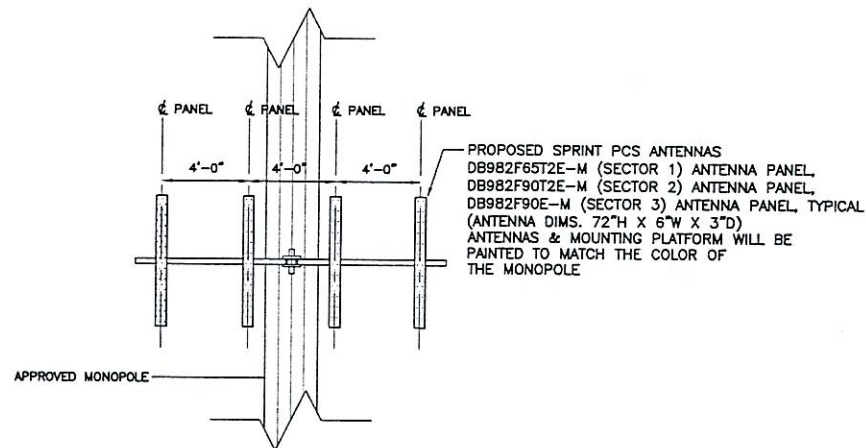
**Sprint Spectrum LP**  
1 International Blvd.~Suite 300  
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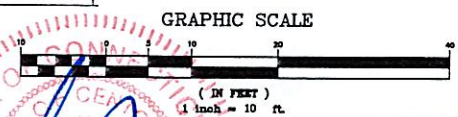


1 ANTENNA ORIENTATION  
C-3 SCALE: 1/4"=1'-0"



2 TOWER ELEVATION  
C-3 SCALE: 1"=10'

REFERENCE IS MADE TO BUILDING PERMIT No. 2-2883 ISSUED BY THE GREENWICH BUILDING DIVISION FOR THE MONOPOLE TOWER AND ASSOCIATED IMPROVEMENTS.




Natcomm, LLC  
63-2 North Branford Road  
Branford, Connecticut 06405  
Tel: (203) 488-0580  
Fax: (203) 488-8587  
Consulting Engineers - Project Management  
Civil - Structural - Mechanical - Electrical

GREENWICH HOSPITAL  
5 PERRYRIDGE ROAD  
GREENWICH, CONNECTICUT  
SITE NO. : CT43XC855B

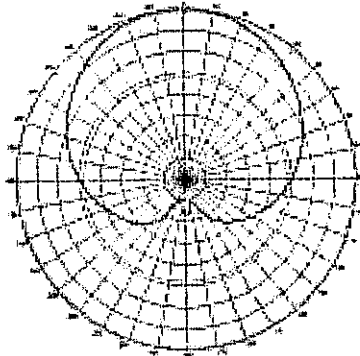
**Sprint Spectrum LP**  
1 International Blvd.~Suite 300  
Mahwah, NJ 07495

NO.	DATE	REVISIONS	BY	CHK	APPV.
1	11/15/02	ISSUED FOR SITING COUNCIL	CMS	JJP	CFC
2	10/24/02	ISSUED FOR SITING COUNCIL REVIEW	CMS	JJP	CFC
DRAWN BY:		P.A.M.	CHECKED BY:		JJP
SCALE:		AS NOTED		DATE: 08/23/02	

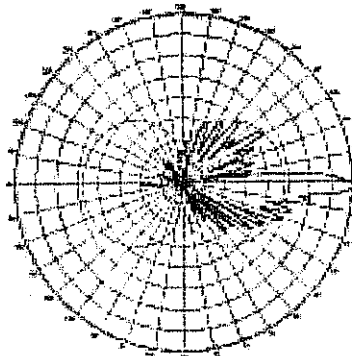
TOWER ELEVATION AND MOUNTING DETAILS		
JOB NO.	DRAWING NUMBER	REV.
02591	C-3	1

 <b>DECIBEL PRODUCTS®</b> <small>An Allen Telecom Company</small>	<b>982F65T2E-M</b> 16.2 dBd Panel Antenna	<b>1850-1990 MHz</b>
		<b>MaxFill™</b>
<ul style="list-style-type: none"><li>• 1850-1990 MHz</li><li>• 16.2 dBd (18.3 dBi) Gain</li><li>• 2° Electrical Downtilt</li><li>• Vertical Polarization</li></ul>		<ul style="list-style-type: none"><li>• 65° Azimuth BW</li><li>• 5.3° Elevation BW</li><li>• 7/16 DIN (Bottom)</li><li>• PCS</li></ul>

Azimuth  
(Horizontal)



Elevation  
(Vertical)

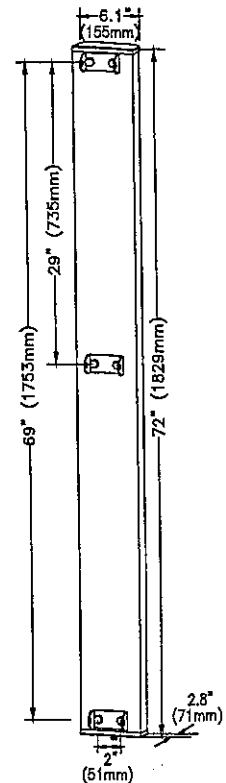
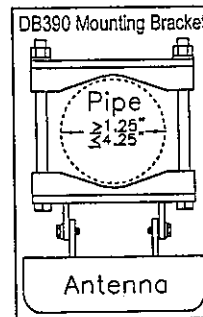


### Electrical

VSWR:	< 1.4:1
USLS:	18 dB
Null Fill:	-12 dB, typical; -15 dB minimum
Front-to-Back Ratio:	30 dB, typical
Max. Input Power:	250 Watts
Impedance:	50 Ohms
Lightning Protection:	All metal parts are grounded.

### Mounting Options

Standard:	DB390 pipe mount kit (Bottom) DB391 pipe mount kit (Back)
Downtilt:	DB5098-3 downtilt bracket, optional.
Wall Azimuth/Swivel:	DB5094-AZ (attach at top and bottom), optional.



### Mechanical

Weight:	10 lbs (4.5 kg)
Wind Area:	3.0 ft² (0.28 m²)
Wind Load:	120 lbf (534N) 53.9 kp (at 100 mph)
Max. Wind Speed:	125 mph (201 km/h)
Back Plate:	Pass. Aluminum
Radiators:	Brass
Radome:	PVC, UV Resistant
Mounting Hardware:	Galvanized Steel
Color:	Gray

8635 Stemmons Freeway • Dallas, Texas U.S.A. 75247-3701  
 Dallas/Ft. Worth Area Tel: 214.631.0310 • Fax: 214.631.4706  
 Toll Free Tel: 1.800.676.5342 • Fax: 1.800.229.4706

www.decibelproducts.com  
 dbtech@decibelproducts.com

**982F90T2E-M**

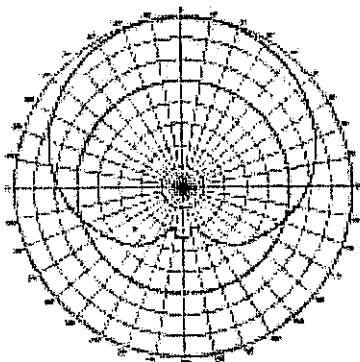
14.8 dBd  
Panel Antenna

**1850-1990 MHz****MaxFill™**

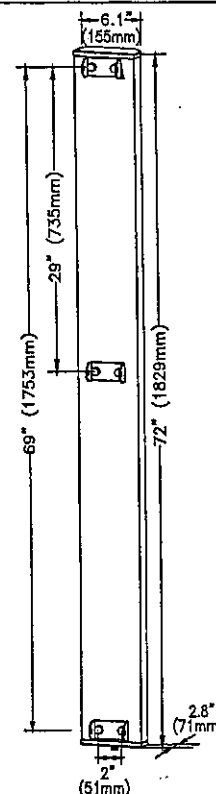
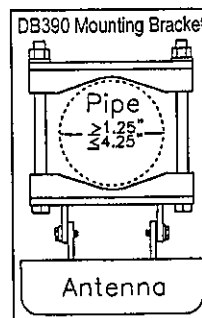
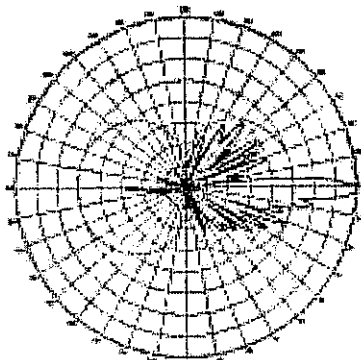
- 1850-1990 MHz
- 14.8 dBd (16.9 dBi) Gain
- 2° Electrical Downtilt
- Vertical Polarization
- 90° Azimuth BW
- 5.3° Elevation BW
- 7/16 DIN (Back)
- PCS

90°

Azimuth  
(Horizontal)



Elevation  
(Vertical)

**Electrical**

VSWR: < 1.4:1  
 USLS: 18 dB  
 Null Fill: -12 dB, typical; -15 dB minimum  
 Front-to-Back Ratio: > 25 dB, typical  
 Max. Input Power: 250 Watts  
 Impedance: 50 Ohms  
 Lightning Protection: All metal parts are grounded.

**Mounting Options**

Standard: DB390 pipe mount kit (Bottom)  
 DB391 pipe mount kit (Back)  
 Downtilt: DB5098-3 downtilt bracket, optional.  
 Wall Azimuth/Swivel: DB5094-AZ (attach at top and bottom), optional.

**Mechanical**

Weight: 10 lbs (4.5 kg)  
 Wind Area: 3.0 ft² (0.28 m²)  
 Wind Load: 120 lbf (534N) 53.9 kp (at 100 mph)  
 Max. Wind Speed: 125 mph (201 km/h)  
 Back Plate: Pass. Aluminum  
 Radiators: Brass  
 Radome: PVC, UV Resistant  
 Mounting Hardware: Galvanized Steel  
 Color: Gray


**Shipping Information**

Packing Size: 77" x 7" x 6" (196 x 18 x 15 cm)  
 Shipping Weight: 17 lbs (7.7 kg)

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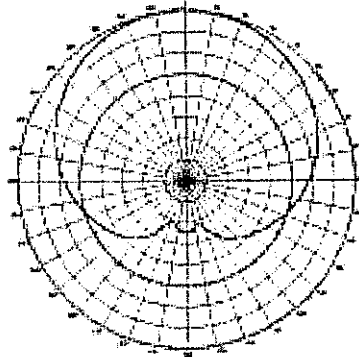


 <b>DECIBEL PRODUCTS</b> <small>An Allen Telecom Company</small>	<h1 style="text-align: center;">DB982F90E-M</h1> <p style="text-align: center;">14.8 dBd Panel Antenna</p>	<b>1850-1990 MHz</b>
		<b>MaxFill™</b>

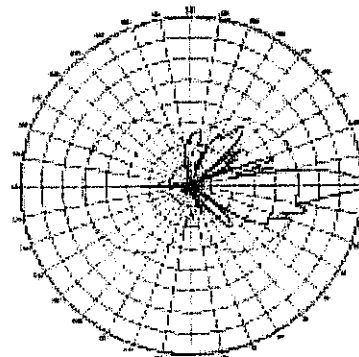
- |                                                                                                                                                                  |                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 1850-1990 MHz</li> <li>• 14.8 dBd (16.9 dBi) Gain</li> <li>• Vertical Polarization</li> <li>• 90° Azimuth BW</li> </ul> | <ul style="list-style-type: none"> <li>• 5.3° Elevation BW</li> <li>• 7/16 DIN (Back)</li> <li>• PCS</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|

006

**Azimuth  
(Horizontal)**



**Elevation  
(Vertical)**

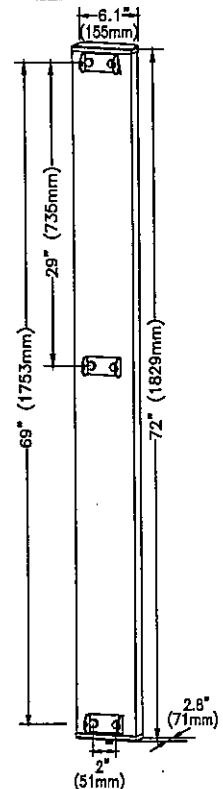
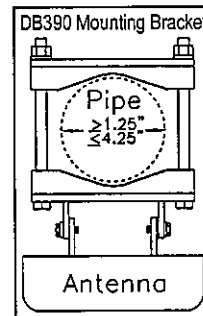


### Electrical

VSWR:	< 1.4:1
USLS:	18 dB
Null Fill:	-12 dB, typical; -15 dB minimum
Front-to-Back Ratio:	> 25 dB, typical
Max. Input Power:	250 Watts
Impedance:	50 Ohms
Lightning Protection:	All metal parts are grounded.

### Mounting Options

Standard:	DB390 pipe mount kit (Bottom) DB391 pipe mount kit (Back)
Downtilt:	DB5098-3 downtilt bracket, optional.
Wall Azimuth/Swivel:	DB5094-AZ (attach at top and bottom), optional.



### Mechanical

Weight:	10 lbs (4.5 kg)
Wind Area:	3.0 ft² (0.28 m²)
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Back Plate:	Pass. Aluminum
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## NATCOMM, LLC

September 10, 2002

Consulting Engineers

Laura Thoman  
Sprint PCS  
1 International Blvd. – Suite 300  
Mahwah, NJ 07495

Re: *Greenwich Hospital – CT43XC855B*  
*5 Perryridge Rd.,*  
*Greenwich, Connecticut*

Natcomm Proj. No. 02591

Dear Laura,

We have reviewed the proposed Sprint antenna and radio equipments installation at the above referenced site. The purpose of the review is to determine the adequacy of an approved 164ft monopole to support the proposed antennas and the feasibility to locate the proposed equipment cabinets. The review considered the effects of wind load, dead load, ice load and seismic forces in accordance with TIA/EIA-222-F and Connecticut State Building Code. Structural design documents prepared by the manufacturer Engineered Endeavors Incorporated (EEI) Job #11030 dated August 21, 2002 were used as reference material.

1. Antenna mount to approved monopole

The proposed antennas loading configuration is as follows:

- Sprint: Twelve (12) ALP-9212N; all mounted to EEI standard lo-profile platform at an elevation of 154 ft.

The future antennas loading configuration is as follows:

- Town: One (1) PD620, one (1) PD1142, one (1) ALR8, three (3) BMR10; all mounted to EEI standard lo-profile platform at an elevation of 164 ft.
- Town: Two (2) HP4-107, one (1) VHB2-180 Micro Wave Dishes mounted to "close-contact" mounting hardware at an elevation of 160 ft.
- Future: Twelve (12) ALP-9212N; all mounted to EEI standard lo-profile platform at an elevation of 144 ft.
- Future: Twelve (12) ALP-9212N; all mounted to EEI standard lo-profile platform at an elevation of 134 ft.
- Verizon: Eighteen (18) ALP-9212N; all mounted to EEI standard lo-profile platform at an elevation of 124 ft.
- Future: Twelve (12) ALP-9212N; all mounted to EEI standard lo-profile platform at an elevation of 114 ft.

In conclusion, the approved 164ft monopole is adequate to support the proposed Sprint antennas in accordance with TIA/EIA-222-F standards for a basic wind speed of 85 mph with ½ inch radical ice.


2. Sprint PCS equipment cabinets at ground level

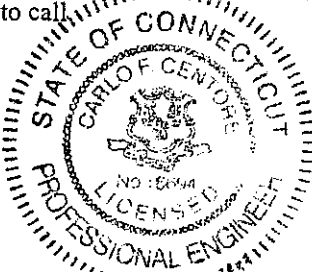
The proposed equipment cabinets are located in the equipment room at parking garage. The following are the description of the proposed equipments:

- Three (3) outdoor modular cell cabinet (1 carrier), weight 986 lbs., and dimension (in)=36Dx 35.5Wx 72H.
- One (1) Power House 24/24G Cabinet, weight 1,747 lbs., dimension (in) =33Dx 31Wx 66H.
- Two (2) 60ECv2/v2G Battery Cabinet with 20 batteries, weight 2,827 lbs., dimension (in) = 30Dx 31Wx 60H.

The proposed equipment load is transmitted directly to the sub grade by means of concrete pad. The result of our review finds the capacity of existing sub grade is adequate to support the proposed Sprint equipment. If there are any questions regarding this matter, please feel free to call.

Submitted by:

  
Emad M. Mourad, P.E.  
Structural Engineer



# HMB

HAROLD R. MULL, BELL AND ASSOCIATES, INC.

~~HMB ACOUSTICS / P.O. Box 304, Trumbull, Connecticut 06611 / 203-268-7070~~

3 Cherry Tree Lane, Avon, Ct. 06001 / 866-677-5955

November 13, 2002

Laura McGeachy  
Attorney at Law  
Cacace Tusch Santagata  
777 Summer Street  
Stamford, Ct. 06901

Subject: Sprint Site # CT43XC855B - Greenwich Hospital - Acoustical Assessment.

Dear Attorney McGeachy:

After reviewing the Siting Council's requirements for noise level compliance, I have concluded that Sprint's equipment will not add 6 dBA or more to the existing background noise levels at the Greenwich Hospital, located at 5 Perryridge Road, Greewich, Ct.

Sincerely,



Allan Smardin  
Acoustical Consultant

## Power Density Analysis: Greenwich – Greenwich Hospital - Site # CT43XC855

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 proposed PCS site is a co-location on the Greenwich Hospital tower located at 5 Perryridge Road in Greenwich, CT. The Sprint PCS transmitting antennas are proposed with an antenna centerline of 154' AGL. This facility will consist of 3 antenna 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 methods consistent with the FCC's OET Bulletin 65, and use  $1.0 \text{ mW/cm}^2$ , which is the Maximum Permissible Exposure (MPE) as specified by NCRP for PCS carriers.

Sprint's PCS antennas were determined to hypothetically contribute 38.54% of the MPE. The cumulative MPE including the potential emissions from the town's communications equipment and Verizon's antennas is 95.08%. This fraction of the MPE is below the applicable ANSI standards and FCC requirements. This analysis is based on the assumption that the proposed antennas would be operating at full transmission capacity. Additionally, antenna pattern attenuation was not considered with the exception of the town's microwave dishes as explained below.

The percent of MPE for the town's communications equipment is taken from the "*Analysis of the Potential Exposure of the General Public to RF Radiation from the Proposed Monopole*", prepared by Langone and Associates, revised January 28, 2002. As described in that report, Langone and Associates used a "worst case analysis" that assumed the radiated RF energy was concentrated at the closest point where the public has access, rather than, at the horizon which is the normal operating condition. The typical "worst case" analysis approach was used in both the Verizon and Sprint PCS calculations, but it leads to a dramatic overestimation of power density.

When calculating the cumulative MPE, the numbers provided by the Langone report were modified slightly to reflect a nominal 10 dB attenuation for microwave dishes. While it would be reasonable to apply 10 dB of attenuation to all antennas due to the higher directivity of microwave dishes, the calculations have been updated to reflect 10 dB of attenuation for the microwave dishes only. This results in a change in percent of MPE from 77% calculated by Langone and Associates to 31.8% for the public safety antennas.



The following table shows the calculated power density and the percent of the MPE using the assumptions outlined above. The property location with the highest power density will be the top floor of the Watson building since it is the closest publicly accessible point to the antennas. At this location, the highest percent of MPE will be 95.08%. The assumptions I used in deriving at this figure are conservative. The actual emissions levels at this location will be considerably lower.

Anthony Wells

*Anthony Wells*

RF Engineer

Sprint PCS, Connecticut

Date: 11/14/2002

**CT43XC855-8**

**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 Above Top Floor of Watson Building (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure*	%MPE
1962.5	11	456.61	5022.71	68.5	0	0.3854	1	38.54%
1962.5	11	456.61	5022.71	68.5	50	0.2514	1	25.14%
1962.5	11	456.61	5022.71	68.5	100	0.1231	1	12.31%
1962.5	11	456.61	5022.71	68.5	150	0.0665	1	6.65%
1962.5	11	456.61	5022.71	68.5	200	0.0405	1	4.05%
1962.5	11	456.61	5022.71	68.5	250	0.0269	1	2.69%
1962.5	11	456.61	5022.71	68.5	300	0.0191	1	1.91%
1962.5	11	456.61	5022.71	68.5	350	0.0142	1	1.42%
1962.5	11	456.61	5022.71	68.5	400	0.0110	1	1.10%
1962.5	11	456.61	5022.71	68.5	450	0.0087	1	0.87%
1962.5	11	456.61	5022.71	68.5	500	0.0071	1	0.71%

\*Requirements set forth in OET Bulletin 65. Based on NCRP Report No. 86 and ANSI/IEEE C95.1-1992

CT33XC855

Cumulative Power Density Analysis of Public Safety, Sprint PCS and Verizon Antennas

Operator	Frequency	Distance	Calculated Power Density	Maximum Permissible Exposure	Fraction of MPE
	(MHz)	(feet)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	(%)
<sup>1</sup> Public Safety Transmitters	see attached table				31.80%
<sup>2</sup> Verizon	869	124	0.0515	0.579	24.74%
Sprint PCS	1962.5	68.5	0.385354	1.000	38.54%

**Total Percentage of Maximum Permissible Exposure** 95.08%

<sup>1</sup> "Analysis of the Potential Exposure of the General Public to RF Radiation from the Proposed Monopole", Langone and Associates, Revised January 28, 2002.

<sup>2</sup> Information From Verizon Wireless Calculations Dated 9/19/02

Table Taken From Langone & Associates report dated January 28, 2002

[illegible]