



STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

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

October 4, 2001

Julie M. Donaldson, Esq.  
Hurwitz & Sagarin LLC  
147 North Broad Street  
P.O. Box 112  
Milford, CT 06460-0112

RE: **EM-SPRINT-011-010924** - Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut.

Dear Attorney Donaldson:

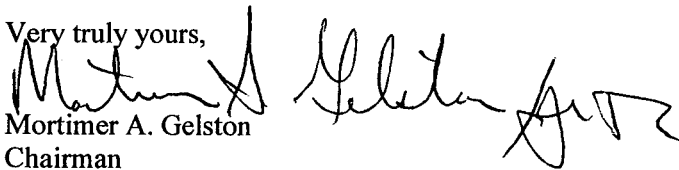
At a public meeting held on October 3, 2001, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies, with the condition that the waveguide cables be installed in a 6 cable wide by 2 cable deep configuration, as specified by a Professional Engineer.

The proposed modifications are to be implemented as specified here and in your notices dated September 24, 2001, and September 25, 2001. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. 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 will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of 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.

Thank you for your attention and cooperation.

Very truly yours,

  
Mortimer A. Gelston  
Chairman

MAG/RKE/laf

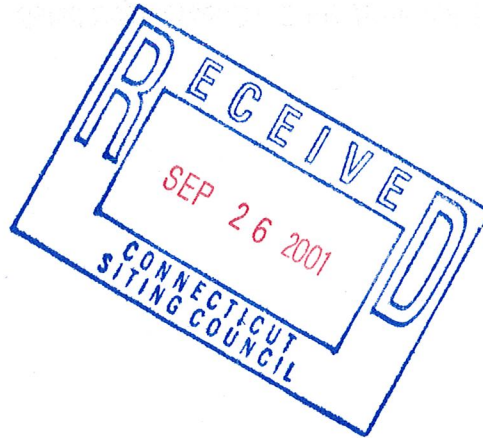
c: Honorable Faith McMahon, Mayor, Town of Bloomfield  
Louie Chapman, Jr., Town Manager, Town of Bloomfield  
Thomas B. Hooper, Director of Planning, Town of Bloomfield  
Esther McNany, SBA Communications, Inc.  
Stephen J. Humes, Esq., LeBoeuf, Lamb, Green & MacRae  
Christopher B. Fisher, Esq., Cuddy & Feder & Worby LLP  
Ronald C. Clark, Nextel Communications

# HURWITZ & SAGARIN LLC

September 25, 2001

Via Facsimile

Mr. Joel Rinebold  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051



**Re: Notice of Exempt Modification  
SBA Telecommunications Facility  
1021 Blue Hills Avenue  
Bloomfield, Connecticut**

Dear Mr. Rinebold:

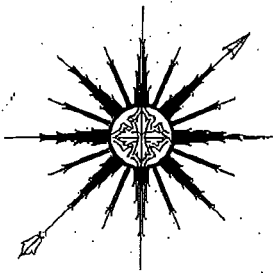
Attached please find a copy of the structural report dated September 21, 2001 from All-Points Technology Corporation, P.C. that indicates that the above referenced facility is capable of supporting the equipment proposed by Sprint Spectrum LP.

Also, please revise the reference to a "125-foot monopole" in this filing, making it a "125-foot lattice tower" as the facility is a lattice tower.

Sincerely,

A handwritten signature in blue ink that reads "Julie M. Donaldson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Julie M. Donaldson

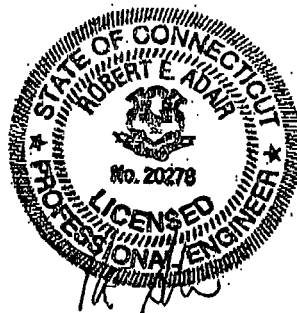


# ALL-POINTS TECHNOLOGY CORPORATION, P.C.

## STRUCTURAL ANALYSIS REPORT 125' SELF-SUPPORTING TOWER 1021 BLUE HILL AVENUE BLOOMFIELD, CONNECTICUT

Prepared for  
SBA, Inc.

September 21, 2001



APT Project #CT115101

711 NORTH MOUNTAIN ROAD • NEWINGTON, CONNECTICUT 06111 • PHONE: 860-953-4444 • FAX: 860-953-1181  
 150 OLD WESTSIDE ROAD • NORTH CONWAY, NEW HAMPSHIRE 03860 • PHONE/FAX: 603-356-5214

09/25/01 TUE 11:19 [TX/RX NO 5144]

**STRUCTURAL ANALYSIS REPORT**  
of  
**125' SELF-SUPPORTING TOWER**  
**BLOOMFIELD, CONNECTICUT**  
prepared for  
**SBA, Inc.**

**EXECUTIVE SUMMARY:**

All-Points Technology Corp., P.C. (APT) performed a structural analysis of this 125-foot self-supporting tower. The analysis was performed with the addition of a twelve panel antenna array installed on three 15' sector mounts at 87-feet.

Our analysis indicates the tower and foundation are capable of supporting the proposed antennas.

**INTRODUCTION:**

A structural analysis was performed on the above-mentioned communications tower by APT for SBA, Inc. The tower is located at 1021 Blue Hill Avenue in Bloomfield, Connecticut. Robert E. Adair, P.E. previously inspected the tower on June 25, 2001 to record information regarding antenna inventory and appurtenances. Tower drawings and member sizes were previously provided by VoiceStream.

The structure is a 125-foot galvanized steel, self-supporting tower manufactured by F.A. Nudd. The analysis was performed with the following antenna inventory:

Antenna	Elev.	Leg	Mount	Coax.
20' Omnidirectional whip - Super Stationmaster	128	-	Rotatable platform	7/8"
(2) 20' Omnidirectional whips - 455DT3 & 455-6	128	-	Rotatable platform	(2) 7/8"
(2) 8' Omnidirectional whips - Andrew PG1N0F	128	-	Rotatable platform	(2) 7/8"
6' Omnidirectional whip - Til-Tek 2350-DAB	128	-	Rotatable platform	1-5/8"
(12) RR90-17DP panels	128	-	Rotatable platform	(24) 1-5/8"
(9) DB844H90 panels	120	All	(3) 10' sector mounts	(9) 1-1/4"
(12) ALP 7184.14 panels	107	All	(3) 12' sector mounts	(12) 1-5/8"
8' Omnidirectional whip - Andrew PG1N0F	105	NE	Pipe - 10' x 2-3/8"	7/8"
(9) ALP 7120.16 panels	97	All	(3) 10' sector mounts	(9) 7/8"
(12) DB980F65 panels (proposed)	87	All	(3) 15' sector mounts	(12) 1-5/8"
3' Yagi	37	NE	Leg	1/2"
2' satellite dish with radome	33	W	Pipe - 4' x 2-7/8"	1/2"

## STRUCTURAL ANALYSIS:

### Methodology:

The structural analysis was done in accordance with EIA/TIA-222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition.

The analysis was conducted using a wind speed of 80 miles per hour and one-half inch of radial ice over the entire structure and all appurtenances. The EIA/TIA Standard requires a minimum wind speed of 80 miles per hour for Hartford County, Connecticut. The tower was analyzed by calculating the resultant wind loading and associated maximum bending moments, shear forces, and axial loads. The moments and forces were used to calculate stresses in leg and bracing members, which were compared to allowable stresses according to AISC.

Two loading conditions were evaluated in accordance with EIA/TIA-222-F to determine the tower's capacity. The more demanding of the two cases is used to calculate the tower capacity:

- Case 1 = Wind Load (without ice) + Tower Dead Load
- Case 2 = 0.75 Wind Load (with ice) + Ice Load + Tower Dead Load

In addition, the TIA/EIA standard permits a one-third increase in allowable stresses for towers less than 700-feet tall. Allowable stresses of tower members were increased by one-third when computing the load capacity values shown below.

### Analysis:

Analysis of the tower was conducted in accordance with the criteria and antenna inventory outlined above. Our analysis determined the existing tower is capable of supporting the proposed antennas. The following table summarizes the results of the analysis based on compressive stresses of individual leg members:

Elevation	Capacity
0-20'	72%
20'-40'	99%
40'-60'	71%
60'-80'	64%
80'-100'	74%
100'-120'	65%
120'-125'	11%

### **Bracing Members:**

Bracing members are installed in an X-brace configuration, with each compression member paired with a corresponding tension member. Bracing was evaluated by calculating bracing member's allowable compression and tension forces and assessing each tower section's ability to resist shear forces.

Bracing members were determined to be appropriately sized based on comparison of calculated vs. allowable tower shear.

### **Base Support:**

Evaluation of the existing base foundation, a 29' square by 4'-3" thick mat according to F.A. Nudd drawings, was performed using reactions calculated under the proposed loading. The foundation was found to be adequate to support the proposed antennas.

Base reactions imposed with the additional antennas were calculated as follows:

Tension:	211.6 kips
Compression:	226.7 kips
Total Shear:	33.6 kips
Overturning Moment:	2367.3 ft-kips

### **CONCLUSIONS AND RECOMMENDATIONS:**

Our structural analysis indicates the 125-foot self-supporting tower and foundation located at 1021 Blue Hill Avenue in Bloomfield, Connecticut are capable of supporting the antenna loading proposed by Sprint PCS.

APT recommends that waveguide cables be installed in an 6 cable wide by 2 cable deep configuration to minimize wind load as shown in the waveguide drawing in Appendix A.

### **LIMITATIONS:**

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in new condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corp., P.C. (APT) is not responsible for any modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening bracing members.
2. Reinforcing leg members in any manner.
3. Adding or relocating stabilizers.
4. Installing antennas and/or mounting brackets or side arms.
5. Extending tower.

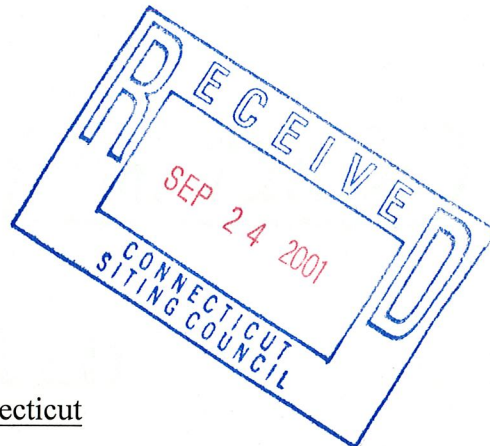
APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

# HURWITZ & SAGARIN LLC

September 24, 2001

*Hand Delivered*

Mr. Joel M. Rinebold  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051




Re: Notice of Exempt Modification  
1021 Blue Hills Avenue, Bloomfield, Connecticut

Dear Mr. Rinebold:

On behalf of Sprint Spectrum L.P. ("Sprint"), I am pleased to submit this exempt modification application letter. Enclosed are an original plus twenty (20) copies of a petition requesting a determination that Sprint's co-location on the telecommunications facility owned by SBA Communications located at 1021 Blue Hills Avenue, Bloomfield, Connecticut, satisfies the requirements set forth in R.C.S.A. §16-50j-72(b)(2). A check in the amount of \$500.00 to cover the filing fee for this petition is also enclosed.

The Mayor of Bloomfield has been sent notice of this petition by certified mail.

Sincerely,

  
JULIE M. DONALDSON  
dsw/enc.

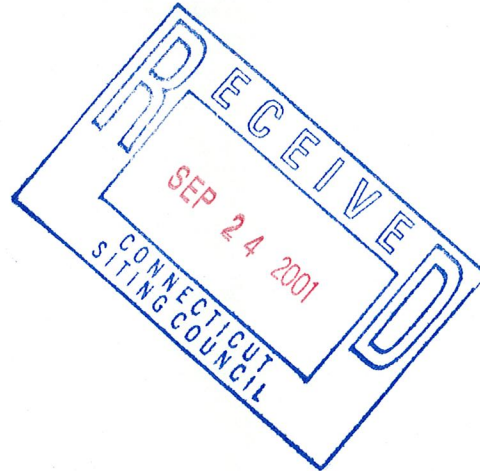
cc: Faith McMahon, Mayor of Bloomfield  
John Woodmaska, Sprint Spectrum L.P.  
Esther McNany, SBA Communications



# HURWITZ & SAGARIN LLC

September 24, 2001

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



**Re: Notice of Exempt Modification  
SBA Telecommunications Facility  
1021 Blue Hills Avenue  
Bloomfield, Connecticut**

Dear Mr. Rinebold:

Sprint Spectrum L.P. ("Sprint") hereby requests acknowledgement that Sprint's proposed co-location on a telecommunications tower located at 1021 Blue Hills Avenue, Bloomfield, Connecticut, ("Bloomfield Facility") constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). Sprint submits this request for acknowledgment as agent for the tower owner, SBA Communications ("SBA"). A letter of authorization is attached hereto as Exhibit A. Under this request for acknowledgment, SBA intends to allow Sprint to install antennas and related equipment at this existing telecommunications facility. Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of modification to an existing telecommunications tower which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor of Bloomfield.

The existing facility consists of a 125-foot monopole and related equipment located at 1021 Blue Hills Avenue, Bloomfield, Connecticut. This tower currently supports antenna arrays operated by Voicestream, Nextel, AT&T, Cingular, and Bloomfield.

Sprint plans to attach nine panel antennas to the existing tower at an antenna centerline of 87 feet, and a GPS antenna at a height of 50 feet. Sprint may install up to seven equipment cabinets on a frame near the base of the tower within the existing site compound.

For the following reasons, the proposed modifications to the Bloomfield Facility fall squarely within and satisfy the requirements set forth in R.C.S.A. § 16-50j-72(b)(2):

1. The proposed modifications will not increase the height of the tower. Sprint's antennas will be installed at a centerline of approximately 87 feet above ground level (AGL). Sprint's GPS antenna will be mounted to the tower at an antenna centerline of 50 feet AGL. The site plan attached as Exhibit B confirms that the proposed Sprint installation will not increase the overall height of the tower.

2. The installation of Sprint equipment near the base of the tower, as reflected on the attached site plan, will not require an extension of the site boundaries. Sprint's proposed equipment location, fencing, access, and utility routing will be located entirely within the existing site.

3. The proposed modifications will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the applicable standard. The "worst-case" RF power density calculation for a point at the tower base would be 0.297358 mW/cm<sup>2</sup> for the Sprint antennas, as depicted in the power density chart attached hereto as Exhibit C. The calculated "worst-case" power density for the combined operations at the site, is 69.31 % of the standard for general population/uncontrolled exposure.

For the foregoing reasons, Sprint respectfully submits that the proposed addition of Sprint's antennas and equipment at the Bloomfield facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Julie M. Donaldson

cc: Faith McMahon, Mayor of Bloomfield  
John Woodmaska, Sprint Spectrum L.P.  
Esther McNany, SBA Communications



July 13, 2001

Graig Joyce  
Sprint PCS  
1 International Blvd., Ste. 800  
Mahwah, NJ 07495

RE: SBA Bloomfield Facility  
1021 Blue Hills Avenue  
SBA #: 8468

Dear Graig:

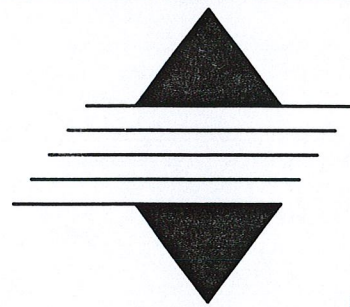
Please consider this as a Letter of Authorization for Sprint to proceed with any and all necessary permits and approvals to collocate on the above referenced facility.

We acknowledge that Sprint has filed a Collocation Application with SBA and that that application has been approved. As always, we look forward to working with you. If I can be of further assistance, please call.

Sincerely,

A handwritten signature in cursive script, appearing to read "Esther K. McNany".

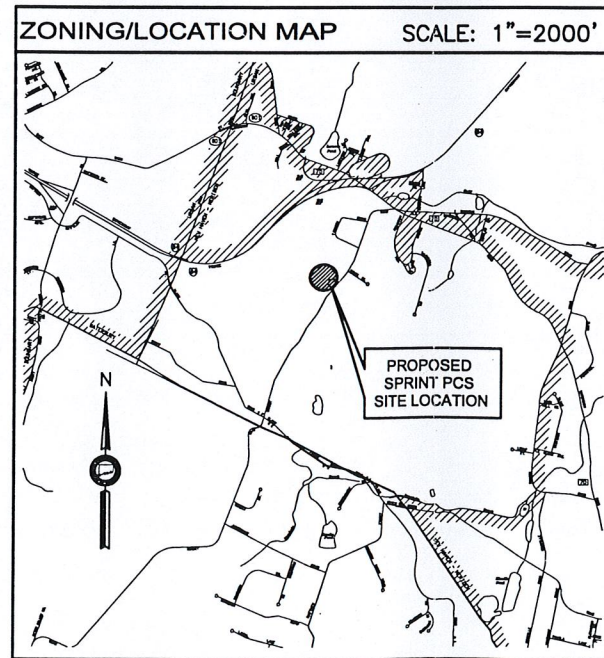
Esther K. McNany  
Territory Manager



# Sprint PCS

## SITE I.D.# CT43XC848

### COTTAGE GROVE 1021 BLUE HILLS AVENUE BLOOMFIELD, CONNECTICUT 06002



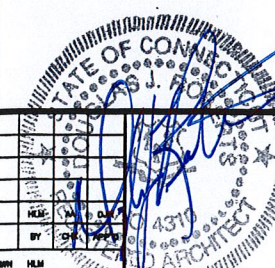
GENERAL NOTES	
1. ADA COMPLIANCE: FACILITY IS NOT STAFFED AND NOT NORMALLY OCCUPIED.	
2. FOR ADDITIONAL NOTES AND DETAILS, SEE ACCOMPANYING DRAWINGS.	
PROJECT DESCRIPTION	
PROPOSED INSTALLATION OF A WIRELESS TELECOMMUNICATIONS FACILITY. SPRINT PCS ANTENNAS SHALL BE MOUNTED ON AN EXISTING LATTICE TOWER WITH GROUND MOUNTED EQUIPMENT	
PROJECT INFORMATION	
SITE NAME:	COTTAGE GROVE
SITE ADDRESS:	1021 BLUE HILLS AVENUE BLOOMFIELD, CONNECTICUT 06002
PROPERTY OWNER:	SBA COOMUNICATIONS
CONTACT PERSON:	DAVID EALES 400 WEST CUMMINGS PARK SUITE 4050 WOBURN, MASSACHUSETTS 01801 (781) 932-1313
LATITUDE:	41° 49' 12.43"
LONGITUDE:	72° 41' 47.45"
PROJECT DIRECTORY	
APPLICANT:	SPRINT SPECTRUM LP dba SPRINT PCS 1 INTERNATIONAL BOULEVARD MAHWAH, NJ 07495
ENGINEER:	URS CORPORATION AES 795 BROOK STREET, BUILDING 5 ROCKY HILL, CT 06067 (860) 529-8882
LAND SURVEYOR:	URS CORPORATION AES 500 ENTERPRISE DRIVE ROCKY HILL, CT 06067 (860) 529-8882
SHEET INDEX	
T-1	TITLE SHEET
SC-1	COMPOUND PLAN AND TOWER ELEVATION

**URS CORPORATION AES**  
795 ENTERPRISE DRIVE  
ROCKY HILL, CONNECTICUT  
1-(860)-529-8882

COTTAGE GROVE  
1021 BLUE HILLS AVENUE  
BLOOMFIELD, CONNECTICUT  
06002  
SITE I.D.# CT43XC848

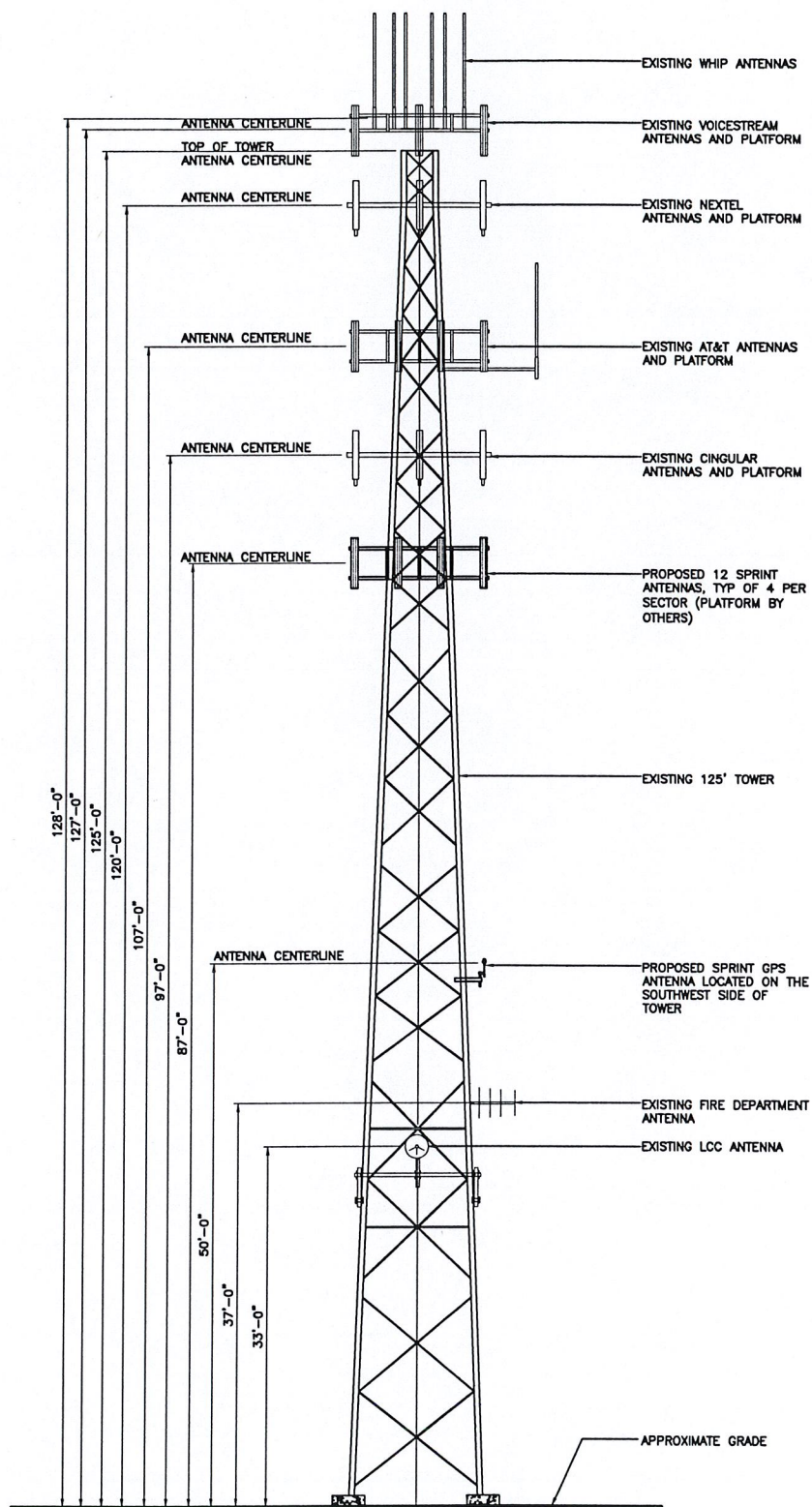
**Sprint PCS**  
HARTFORD MTA

NO.	DATE	REVISIONS	BY

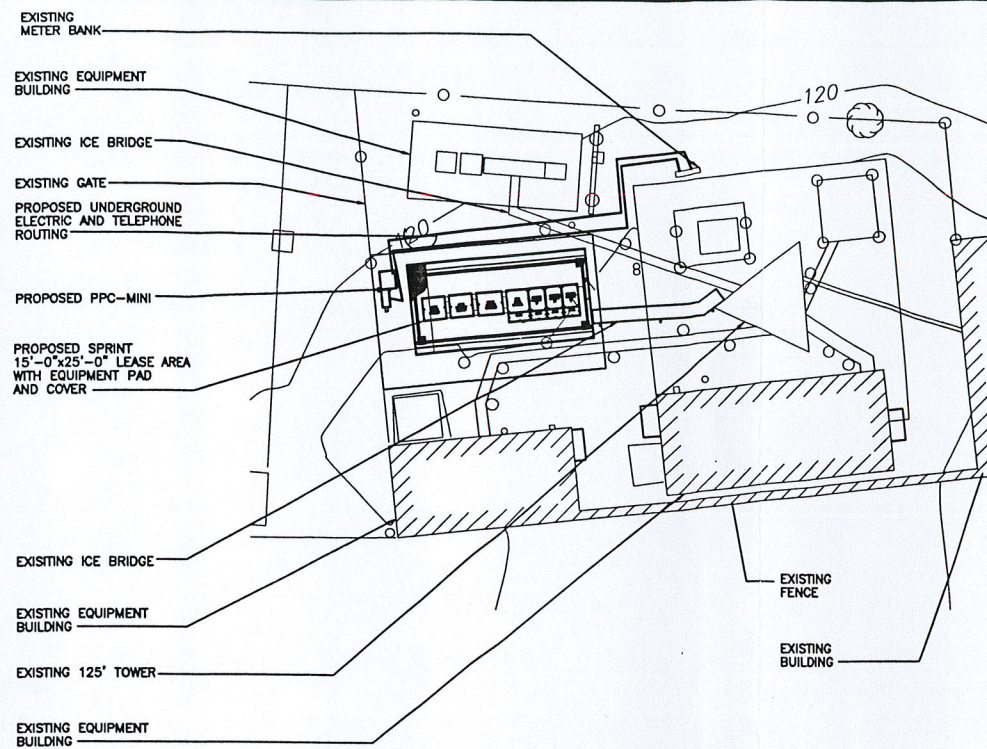


**Sprint PCS**  
TITLE SHEET  
JOB NO. F301972.45/F03  
DRAWING NUMBER T-1  
REV 0

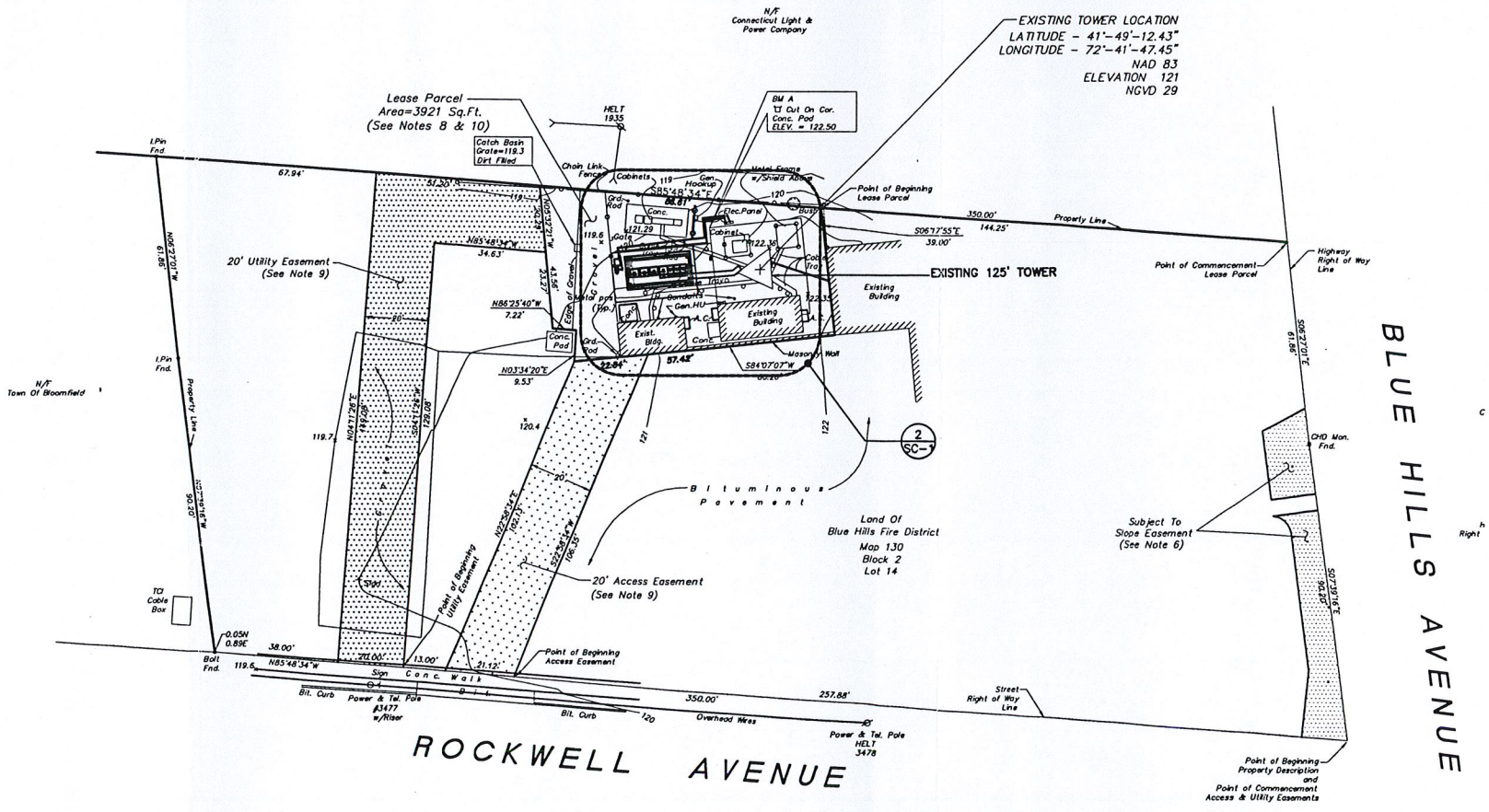
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**3** TOWER ELEVATION  
SC-1 SCALE: 1/8" = 1'-0"



**2** COMPOUND PLAN  
SC-1 SCALE: 1" = 10'-0"



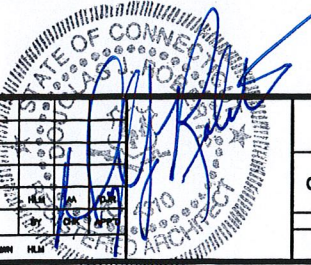
**1** SITE PLAN  
SC-1 SCALE: 1" = 25'-0"

**URS CORPORATION AES**  
795 ENTERPRISE DRIVE  
ROCKY HILL, CONNECTICUT  
1-(860)-529-8882

COTTAGE GROVE  
1021 BLUE HILLS AVENUE  
BLOOMFIELD, CONNECTICUT  
06002  
SITE I.D.# CT43XC848

**Sprint PCS**  
HARTFORD MTA

NO.	DATE	ISSUED FOR REVIEW	REVISIONS	BY
08-17-01		ISSUED FOR REVIEW		



**Sprint PCS**  
COMPOUND PLAN AND TOWER ELEVATION  
JOB NO. F301972.45/F03  
DRAWING NUMBER SC-1  
REV 0

### Power Density Analysis Table

Site: CT43XC848 (Cottage Grove) - SBA Tower, 1021 Blue Hills Avenue, Bloomfield, CT 06002.

Worst Case Power Density Analysis of Sprint PCS Antennas @ Base of Tower. Assumes Max ERP & No Antenna Pattern Adjustment.

Operating Frequency (MHz)	Number of Antennas	Effective Radiated Power (ERP) Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (feet)	Distance From Base of Tower (feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure	%MPE
1962.5	11	568.36	6251.96	87	0	0.297358	1	29.7358%
1962.5	11	568.36	6251.96	87	50	0.223528	1	22.3528%
1962.5	11	568.36	6251.96	87	100	0.128107	1	12.8107%
1962.5	11	568.36	6251.96	87	150	0.074851	1	7.4851%
1962.5	11	568.36	6251.96	87	200	0.047315	1	4.7315%
1962.5	11	568.36	6251.96	87	250	0.032121	1	3.2121%
1962.5	11	568.36	6251.96	87	300	0.023068	1	2.3068%
1962.5	11	568.36	6251.96	87	350	0.017304	1	1.7304%
1962.5	11	568.36	6251.96	87	400	0.013432	1	1.3432%
1962.5	11	568.36	6251.96	87	450	0.010714	1	1.0714%
1962.5	11	568.36	6251.96	87	500	0.008738	1	0.8738%

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

Site: CT43XC848 (Cottage Grove) - SBA Tower, 1021 Blue Hills Avenue, Bloomfield, CT 06002.

Cumulative Power Density Analysis of Sprint PCS & Other Co-location Antennas

Operator	Operating Frequency (MHz)	Distance to Target (ft)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure (mW/cm <sup>2</sup> )	Fraction of MPE
<b>Sprint PCS</b>	1962.5	87	0.297358	1.0000	29.7358%
<b>AT&amp;T Wireless - PCS<sup>1</sup></b>	1950	107	NA	NA	3.9000%
<b>Voice Stream - PCS<sup>1</sup></b>	1950	NA	NA	NA	6.9000%
<b>Others from previous reports<sup>1</sup></b>	NA	NA	NA	NA	28.7750%
<b>Total Percentage of Maximum Permissible Exposure</b>					<b>69.3108%</b>

<sup>1</sup> Information taken from the Power Density Information prepared by AT&T Wireless.

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



STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

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

September 25, 2001

Honorable Faith McMahon  
Mayor  
Town of Bloomfield  
Town Hall  
800 Bloomfield Avenue  
P. O. Box 337  
Bloomfield, CT 06002-0337

RE: **EM-SPRINT-011-010924** - Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut.

Dear Mayor McMahon:

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

The Council will consider this item at the next meeting scheduled for Wednesday, October 3, 2001, at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

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

Thank you for your cooperation and consideration.

Very truly yours,

A handwritten signature in black ink, appearing to read "Joel Rinebold".

Joel M. Rinebold  
Executive Director

JMR/RKE/laf

Enclosure: Notice of Intent

c: Thomas B. Hooper, Director of Planning, Town of Bloomfield  
Louie Chapman, Jr., Town Manager, Town of Bloomfield

