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

April 16, 2001

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

RE: **EM-SPRINT-097-010326** - Sprint Spectrum, L.P. notice of intent to modify an existing telecommunications facility located at 201 South Main Street, Newtown, Connecticut.

Dear Attorney Tusch:

At a public meeting held on April 12, 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.

The proposed modifications are to be implemented as specified here and in your notice dated March 23, 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 Herbert C. Rosenthal, First Selectman, Town of Newtown
Mr. Gary Frenette, Zoning Enforcement Officer, Town of Newtown
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae

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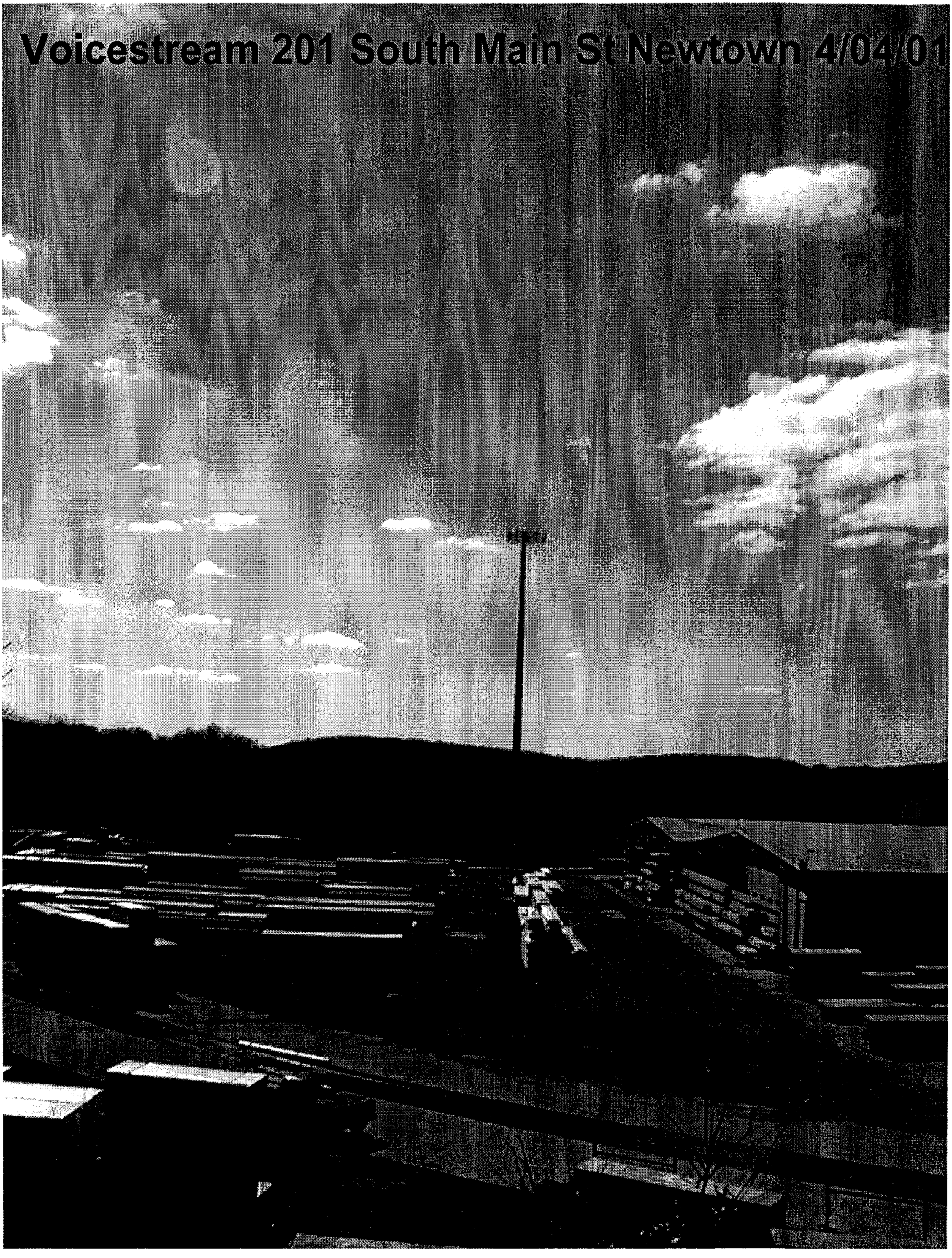
Voicestream 201 South Main St Newtown 4/04/01

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

March 26, 2001

Honorable Herbert C. Rosenthal
First Selectman
Town of Newtown
Town Hall
45 Main Street
Newtown, CT 06470

RE: **EM-SPRINT-097-010326** - Sprint Spectrum, L.P. notice of intent to modify an existing telecommunications facility located at 201 South Main Street, Newtown, Connecticut.

Dear Mr. Rosenthal:

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 April 12, 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,

Joel M. Rinebold
Executive Director

JMR/RKE/laf

Enclosure: Notice of Intent

c: Gary Frenette, Zoning Enforcement Officer, Town of Newtown

I:\siting\em\sprint\newtown\rosenthal1.doc

CACACE
TUSCH
SANTAGATA

Attorneys at Law

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

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Greenwich Office:
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Greenwich, Connecticut 06830

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MICHAEL J. CACACE*
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RICHARD S. FISHER
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SHERWOOD R. SPELKE
JANE W. FREEMAN
EDWARD F. NEMCHEK*
ALICE ANN FITZPATRICK
PATRICK L. POESCHL*
LAURA M. ALLEN*
JOSEPH T. PUHEKKER*+
DAVID J. COVIELLO

OF COUNSEL
ERIC D. GRAYSON*

LEGAL ASSISTANTS
EVA LEE CHAN
CYNTHIA L. MAMMONE
EVA A. DEVITO

*ALSO ADMITTED IN NEW YORK
+ALSO ADMITTED IN LOUISIANA

March 23, 2001

RECEIVED
MAR 26 2001
CONNECTICUT
SITING COUNCIL

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

Re: Notice of Exempt Modification per R.C.S.A.§16-50j-72(b)(2)
Applicant: Sprint Spectrum, L.P. co-location on VoiceStream monopole
Location: Georgia Pacific Corporation, 201 South Main Street, Newtown

Dear Mr. Rinebold:

Enclosed is an original and twenty-two (22) 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).

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/lma
Enclosure
cc: Kim Filomia, Sprint Spectrum L.P.

F:\docs\PNZ\b1323let.spr

CACACE TUSCH & SANTAGATA

Attorneys at Law

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

(203) 327-2000
Facsimile (203) 353-3392

Greenwich Office:
124 West Putnam Avenue
Greenwich, Connecticut 06830

e.mail: PTUSCH@LAWCTS.COM

March 23, 2001

VIA AIRBORNE EXPRESS

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

Re: Notice of Exempt Modification per R.C.S.A.§16-50j-72(b)(2)
Applicant: Sprint Spectrum, L.P. co-location on VoiceStream monopole
Location: Georgia Pacific Corporation, 201 South Main Street, Newtown

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 at the existing VoiceStream Wireless (Voicestream) facility pursuant to the Regulations of Connecticut State Agencies (R.C.S.A.) §16-50j-72(b)(2). A copy of this correspondence is being sent to the First Selectman of Newtown, the Honorable Herbert C. Rosenthal, 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 VoiceStream Wireless, 100 Filley Street, Bloomfield, Connecticut. Sprint has a lease agreement with VoiceStream to install its facility entirely within the compound area VoiceStream leased from the property owner, Georgia Pacific Corporation at 201 South Main Street, Newtown, Connecticut. VoiceStream received all of the necessary municipal approvals and permits from the Town of Newtown for the construction of its 150' monopole last year. VoiceStream's monopole is designed to support two additional carriers' antennas and Sprint would be the second carrier to install a wireless facility on this tower.

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 service 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, 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 Town of Newtown and specifically, Route 25. Without the proposed cell site, the coverage in the Town of Newtown and the surrounding areas would be insufficient to provide reliable wireless service to residents of, businesses in, and visitors to Newtown. Sprint wishes to co-locate on VoiceStream's monopole and share the use of the existing facility to avoid the unnecessary proliferation of towers in the area.

Sprint has prepared a visual analysis to demonstrate the need to locate a wireless telecommunications facility in this area of Newtown. The analysis, consisting of signal propagation maps, is attached hereto as Exhibit B. The first signal propagation map displays the geographic area served by the proposed wireless facility. The area that is colored blue displays Sprint's coverage from existing and proposed facilities and the area depicted in white shows existing "holes" in coverage or areas suffering from a lack of coverage. As can be seen, significant coverage gaps exist in the area surrounding the proposed site. These gaps will be filled by constructing a Sprint facility at the site. The area colored green on the second propagation map displays an extensive coverage area

that would be provided from the proposed facility at 201 South Main Street once it is installed and on air. The propagation study demonstrates a compelling public need for this facility.

PROJECT DESCRIPTION:

The proposed PCS facility on the VoiceStream tower at 201 South Main Street, Newtown, will consist of nine directional panel antennas with three antennas located at three different sectors on one triangular mounting platform. The radiation centerline of the antennas will be 137' above ground level (AGL). The Construction Drawings for the site (T-1, C-1 through C-4, E-1 through E-4) are attached as Exhibit C. The proposed antennas for Sector 1 and 3 are Decibel DB980F90E-M and for Sector 2 are Decibel DB980F90T2E-M. One GPS antenna, Lucent No. 407517689 will be mounted at approximately 75' AGL. The PCS antennas are approximately 60" high by 6.1" wide by 2.8" deep. Further antenna details are listed in the manufacturers' specifications sheet attached as Exhibit D.

Sprint also plans to construct a 20' by 10' concrete equipment pad for the placement of the associated base station equipment. All equipment will be contained within the existing Voicestream compound. The related equipment consists of seven cabinets: two power cabinets, a battery backup unit, a CDMA minicell, and three growth cabinets that are approximately 5'6" high by 3' wide by 3'6" deep. See Exhibit B, Drawing C-2 for the Equipment Support Plans and Details.

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 for Georgia Pacific Corporation from South Main Street/Route 25 will provide site access. The facility will be powered with 200 amp electrical service and it will have a 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.

Sprint's facility and VoiceStream's tower at 201 South Main Street 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 is structurally sound to support the addition of Sprint's proposed antennas as detailed in the structural analyses performed by both Sprint and VoiceStream which are attached as Exhibit E.

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

Sprint's proposed modifications to VoiceStream's tower site will not cause a substantial adverse environmental effect since Sprint complies with the four exception criteria set forth in R.C.S.A. §16-50j-72(b)(2) and compliance with that regulatory exemption section enables the Council to grant Sprint an exempt modification.

First, the changes to the existing tower site will not increase the tower height. VoiceStream's tower is currently 150' tall. VoiceStream's antennas were approved for installation with a radiation centerline of 147' AGL. Sprint's antennas are proposed to be installed with a radiation centerline of 137' AGL. VoiceStream'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 existing tower and construction of a concrete pad for related equipment does not extend the boundaries of the tower site. VoiceStream leased a 50' by 50' compound from Georgia Pacific Corporation. Sprint has negotiated with VoiceStream to install a 20' by 10' concrete pad within VoiceStream's 50' by 50' compound area as depicted on Exhibit B, Drawing C-1, Compound Plan and Elevation. 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. Sprint plans show that a battery backup unit will be installed in the event of any power outage and a permanent generator is not proposed at the site.

Finally, 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 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 to hypothetically emit 7.99957% of the MPE and the cumulative MPE factoring in the potential emissions from VoiceStream's antennas is 9.78%. This fraction of the MPE is well below the applicable ANSI standards and FCC requirements. The power density analysis is attached as Exhibit F.

CONCLUSION:

For the foregoing reasons, Sprint respectfully submits that its proposed antennas on VoiceStream's 150' telecommunications tower at 201 South Main Street and the associated equipment constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2). 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/lma
Enclosure
cc: Kim Filomia
Laura Thoman
Helen Grant
Joseph Grimmett
Andrew Sabetta
Jason Pintek
Sri Adimulam

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United States of America
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: 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.

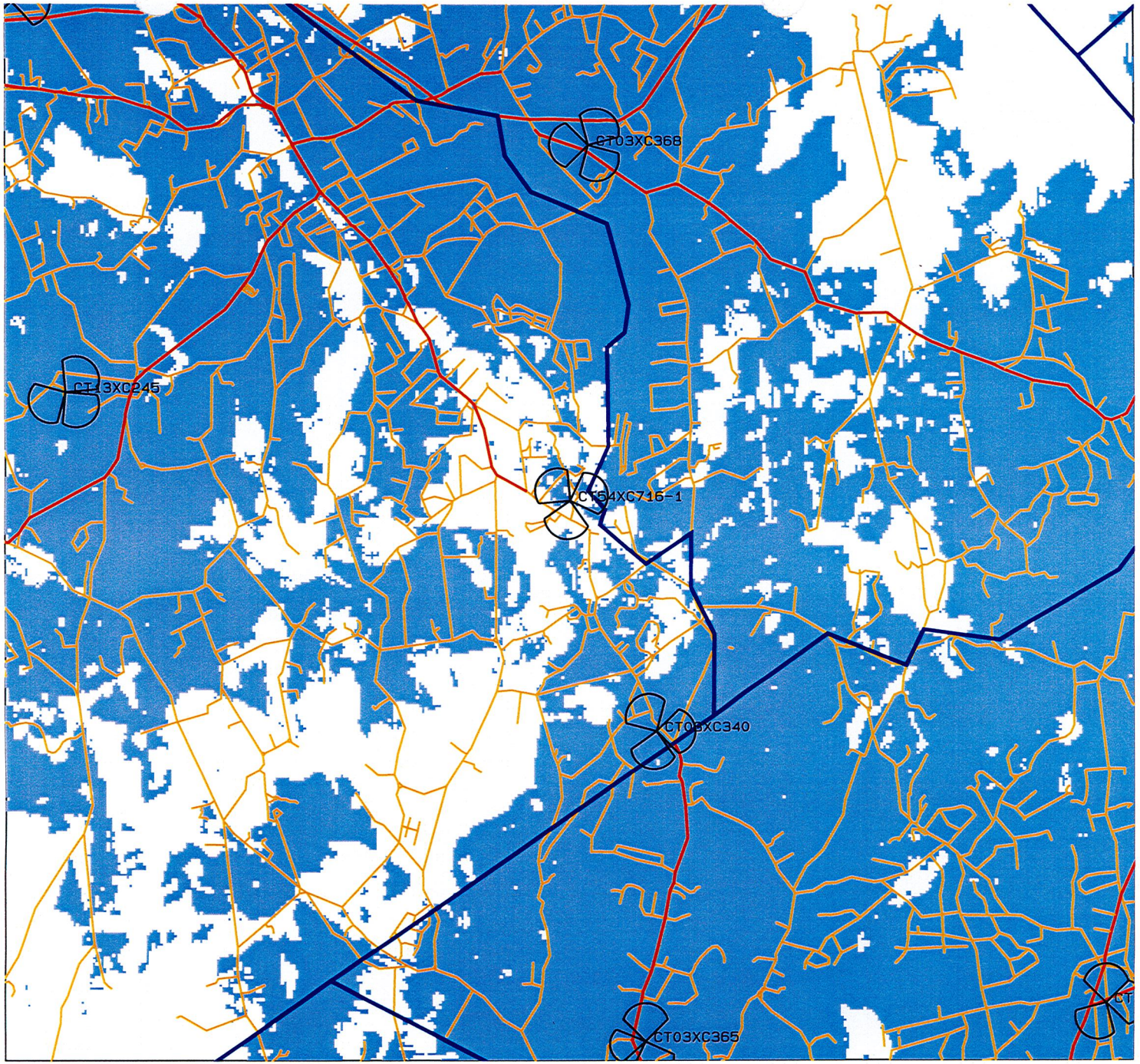
WAIVERS :

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.

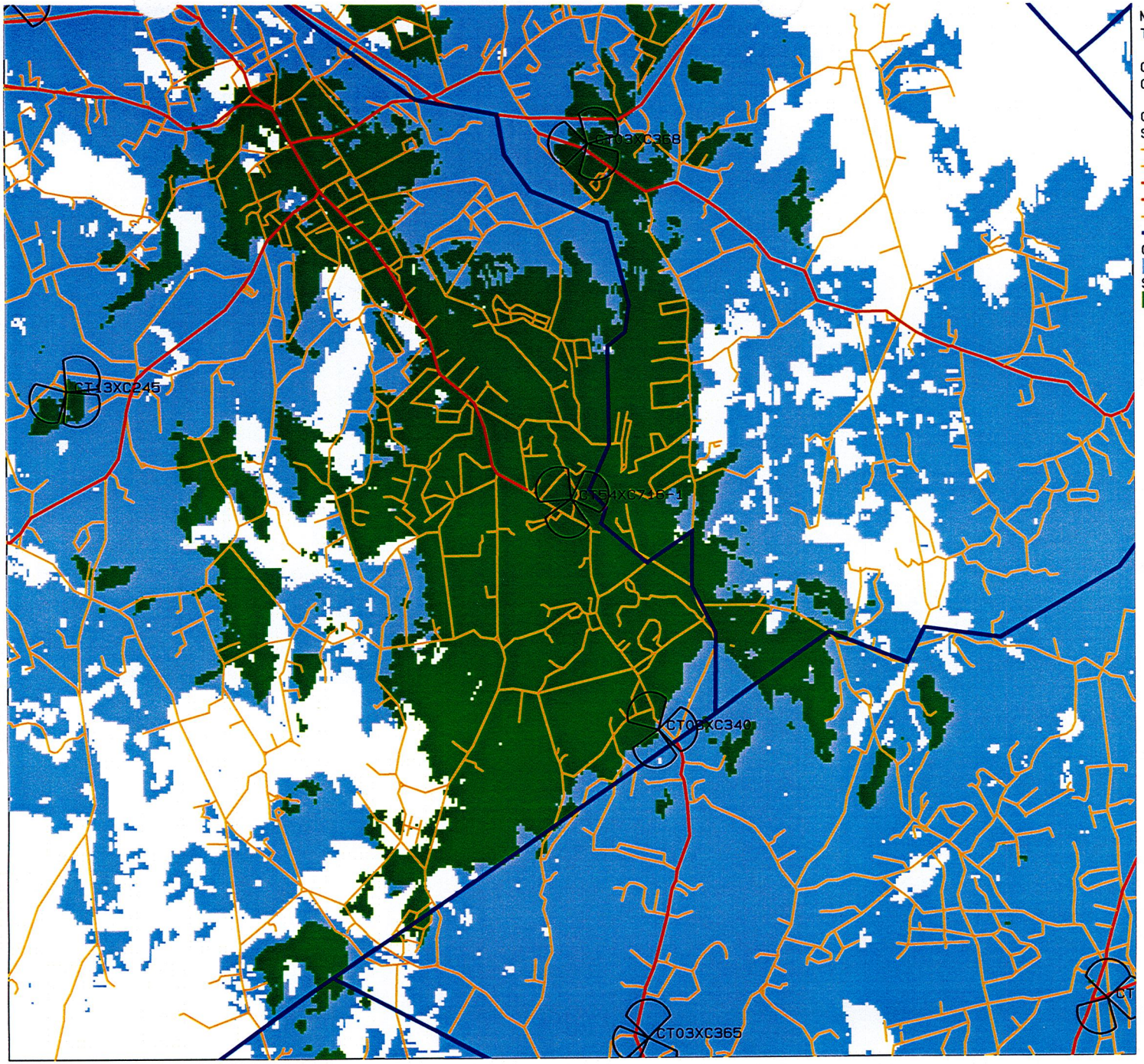


Metapath Software International Inc
Tue Mar 06 14:13:57 2001

Coverage from Surrounding sites
CT54XC716-1 Botsford

Centre Long: 73 16'26.6"W Lat: 41 22'41.7"N
Scale: 1:62159
- Connecting_Road
- Neighborhood_Road
- Primary_Road
- Secondary_Road
- Road
- Zipcode Boundaries

Coverage
- Rural Level: -94dBm



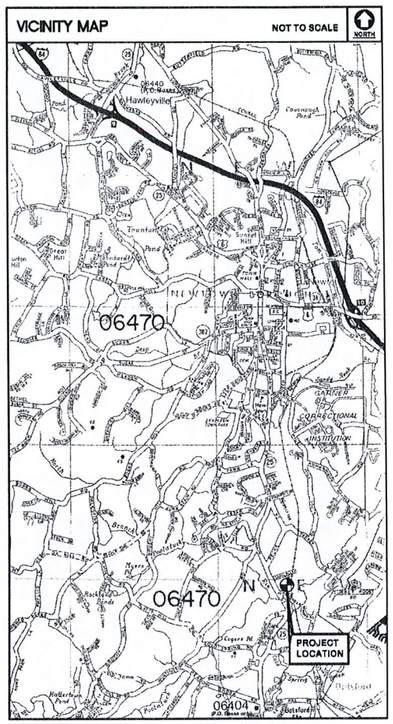
Metapath Software International Inc
Tue Mar 06 14:16:53 2001

Coverage from Proposed site
CT54XC716-1 Ht=137ft GE=390ft

Centre Long: 73 16'26.6"W Lat: 41 22'41.7"N
Scale: 1:62159
- Connecting_Road
- Neighborhood_Road
- Primary_Road
- Secondary_Road
- Road
- Zipcode Boundaries

Coverage
- Rural Level: -94dBm

Signal dBm
- >= -94



Sprint PCS

WIRELESS COMMUNICATIONS FACILITY
SITE No.: CT54XC716
BOTSFORD
201 SOUTH MAIN STREET
NEWTOWN, CONNECTICUT 06470

PROJECT SUMMARY

SITE NAME:	BOTSFORD
SITE NUMBER:	CT53XC716
SITE ADDRESS:	201 SOUTH MAIN STREET NEWTOWN, CONNECTICUT 06470
SITE OWNER:	VOICESTREAM WIRELESS 100 FILLEY STREET BLOOMFIELD, CONNECTICUT 06002 (860) 692-7100 RICK FRAZIER
PROPERTY OWNER:	GEORGIA PACIFIC 201 SOUTH MAIN STREET NEWTOWN, CONNECTICUT 06470
TENANT:	SPRINT SPECTRUM LP 1 INTERNATIONAL BLVD.~SUITE 300 MAHWAH, NJ 07495
CENTER OF TOWER:	LATITUDE: 41° 22' 41.42" LONGITUDE: 73° 16' 26.74" GROUND ELEVATION: 310' AMSL

GENERAL NOTES

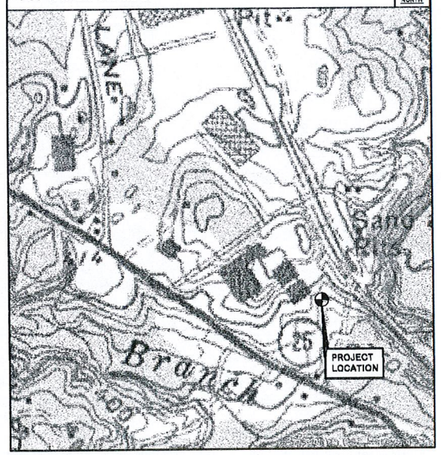
1. PROPOSED ANTENNA AND MOUNTING PLATFORM ELEVATIONS WERE PROVIDED BY SPRINT PCS. EXISTING PLATFORM HEIGHT INFORMATION PROVIDED BY THE SITE OWNER.
2. COMPOUND LAYOUT IS BASED ON INFORMATION OBTAINED FROM DRAWING A-1 DATED 10/5/00 BY ARCNET FOR VOICESTREAM WIRELESS.
3. UNDERGROUND UTILITY LOCATIONS ARE SCHEMATIC AND ARE PRESUMED BASED ON SITE LAYOUT AND DRAWING E-5 DATED 10/5/00 BY ARCNET FOR VOICESTREAM WIRELESS.
4. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SPRINT SPECTRUM (SSLP) "STANDARD CONSTRUCTION SPECIFICATIONS" IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATIONS AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN. IN CASE OF A CONFLICT BETWEEN SSLP STANDARD PRACTICES AND EITHER THE CONSTRUCTION SPECIFICATIONS OR THE DRAWINGS, THE SSLP STANDARD PRACTICES SHALL GOVERN.
5. FOR ADDITIONAL NOTES AND DETAILS REFER TO THE ACCOMPANYING DRAWINGS.

SITE DIRECTIONS

FOLLOW ROUTE I-84 EAST TOWARDS DANBURY TAKE THE US-6 EXIT, EXIT NUMBER 10, TOWARDS NEWTOWN/SANDY HOOK. TURN LEFT ONTO US-6/CHURCH HILL RD. TURN LEFT ONTO SOUTH MAIN ST/CT-25.

TOPOGRAPHY MAP

SCALE: 1" = 1,000'



SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
C-1	COMPOUND PLAN AND ELEVATION	0
C-2	EQUIPMENT SUPPORT PLANS AND DETAILS	0
C-3	PPC, CONCRETE PAD DETAILS AND NOTES	0
C-4	DETAILS AND THIRD PARTY BILL OF MATERIALS	0
E-1	UTILITY PLANS AND NOTES	0
E-2	ELECTRICAL DETAILS	0
E-3	ELECTRICAL DETAILS	0
E-4	CELLULAR INSTALLATION NOTES	0

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

BOTSFORD
201 SOUTH MAIN STREET
NEWTOWN, CONNECTICUT 06470
SITE NO.: CT54XC716

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

NO.	DATE	REVISIONS	BY	CHK	APPV.
1	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFC

DRAWN BY: JBA | CHECKED BY: JJP | SCALE: AS NOTED | DATE: 01/25/01

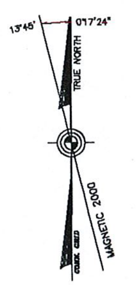
PROFESSIONAL ENGINEER SEAL

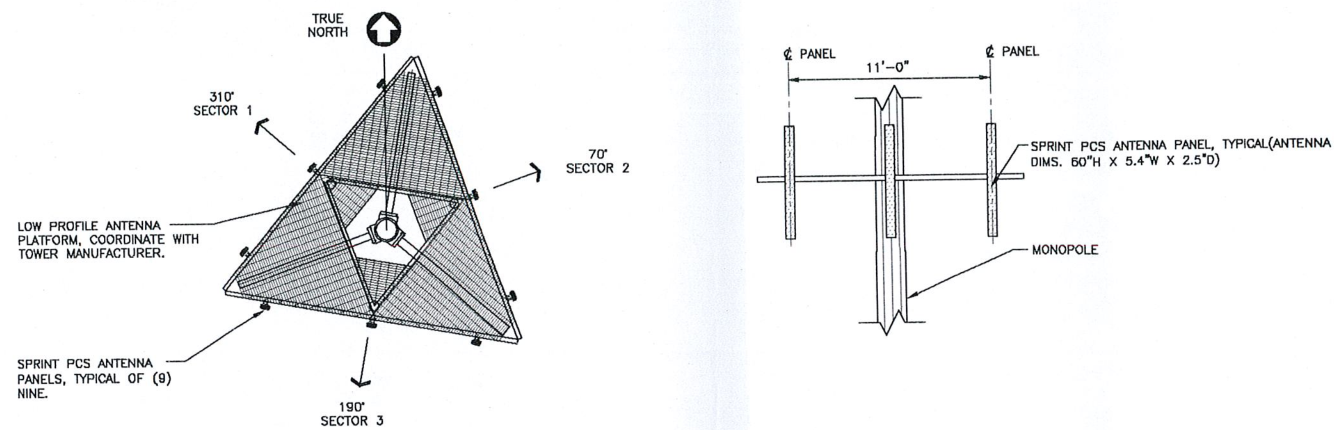
Sprint Spectrum LP

TITLE SHEET

JOB NO.	DRAWING NUMBER	REV.
290A	T-1	0

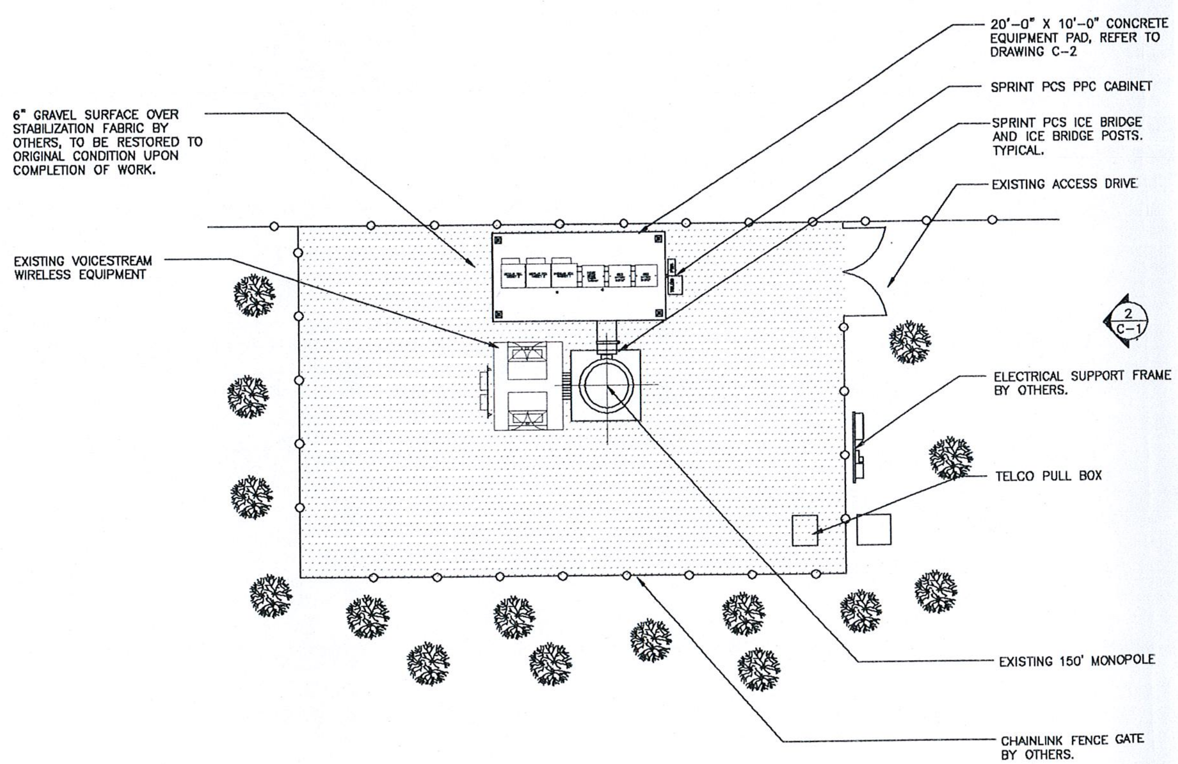
290ASCT1.dwg 3-22-01 1:31:41 pm EST





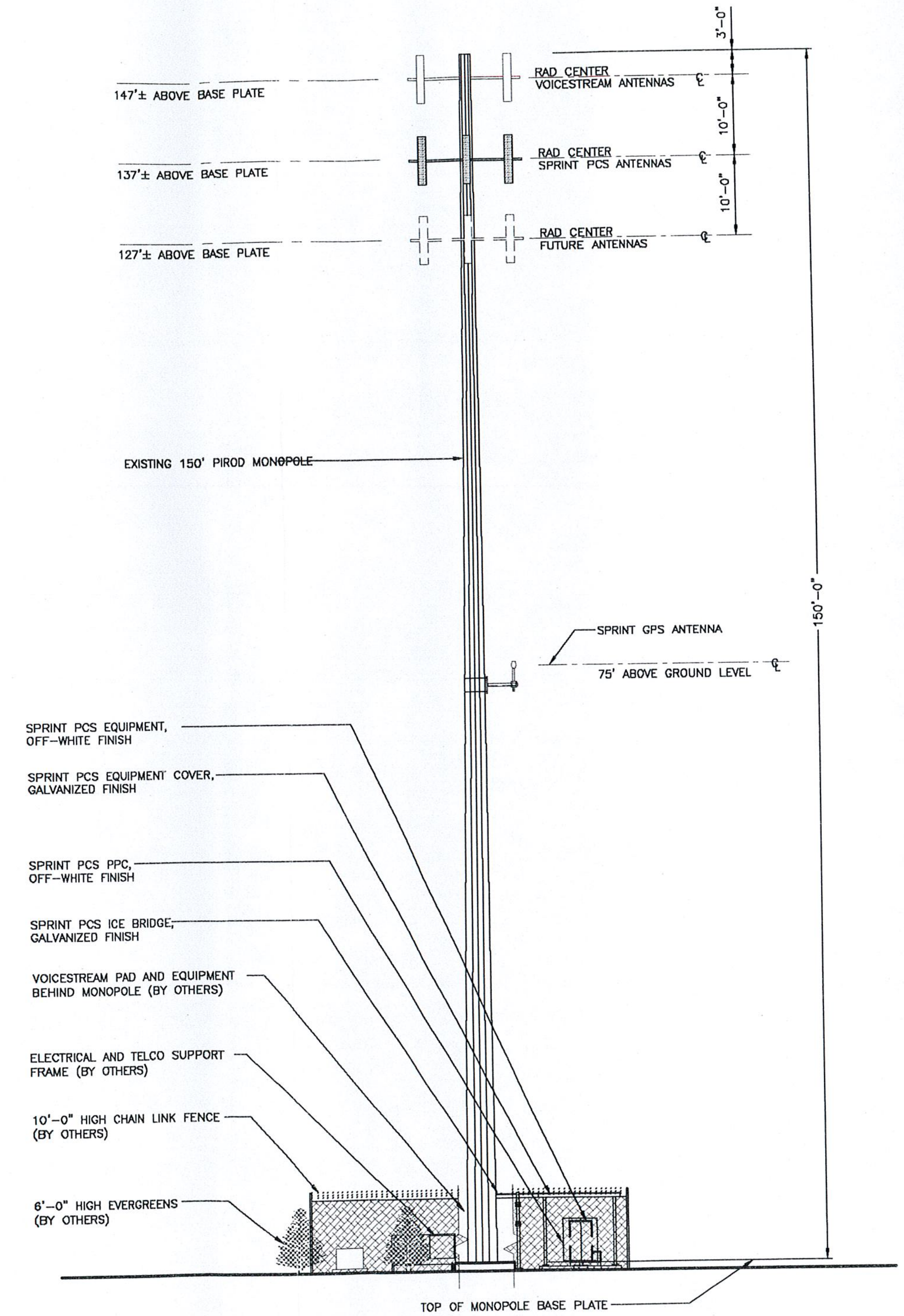
3 C-1 MONOPOLE ANTENNA MOUNTING CONFIGURATION

SCALE: NONE



1 C-1 COMPOUND PLAN

SCALE: 1"=10'-0"



2 C-1 TOWER ELEVATION

SCALE: 1"=10'-0"

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

BOTSFORD
201 SOUTH MAIN STREET
NEWTOWN, CONNECTICUT 06470
SITE NO. : CT54XC716

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

NO.	DATE	REVISIONS	BY	CHK	APPV
0	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFC

DRAWN BY: P.A.M. | CHECKED BY: JBA | SCALE: AS NOTED | DATE: 01/25/01 | PROFESSIONAL ENGINEER SEAL

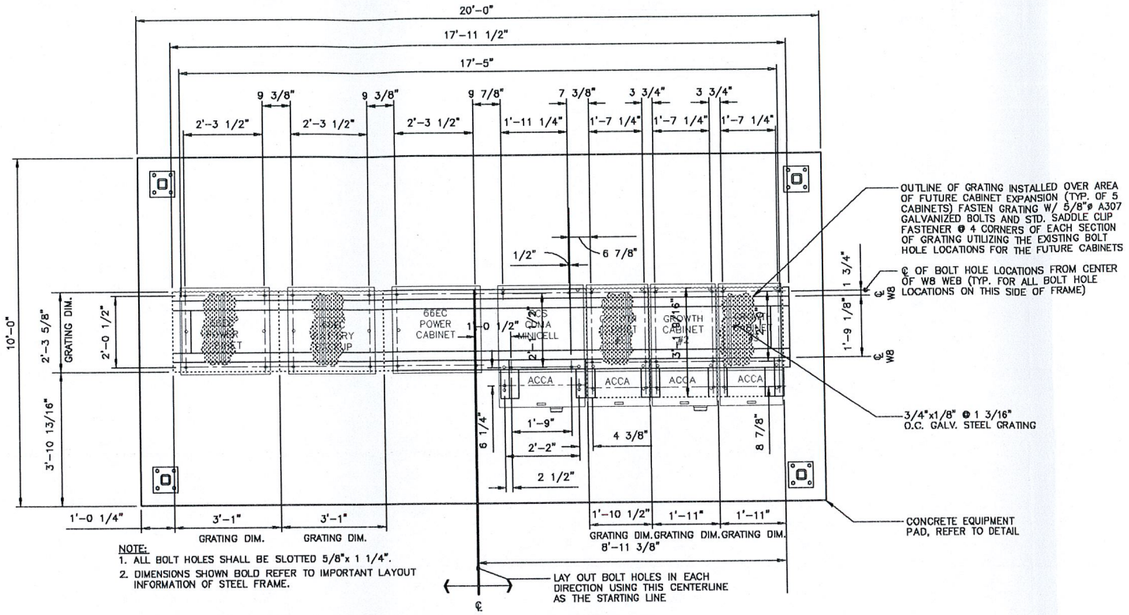
STATE OF CONNECTICUT — CARLO F. CENTORE — No. 16694 — LICENSED PROFESSIONAL ENGINEER

Sprint Spectrum LP

COMPOUND PLAN AND ELEVATION

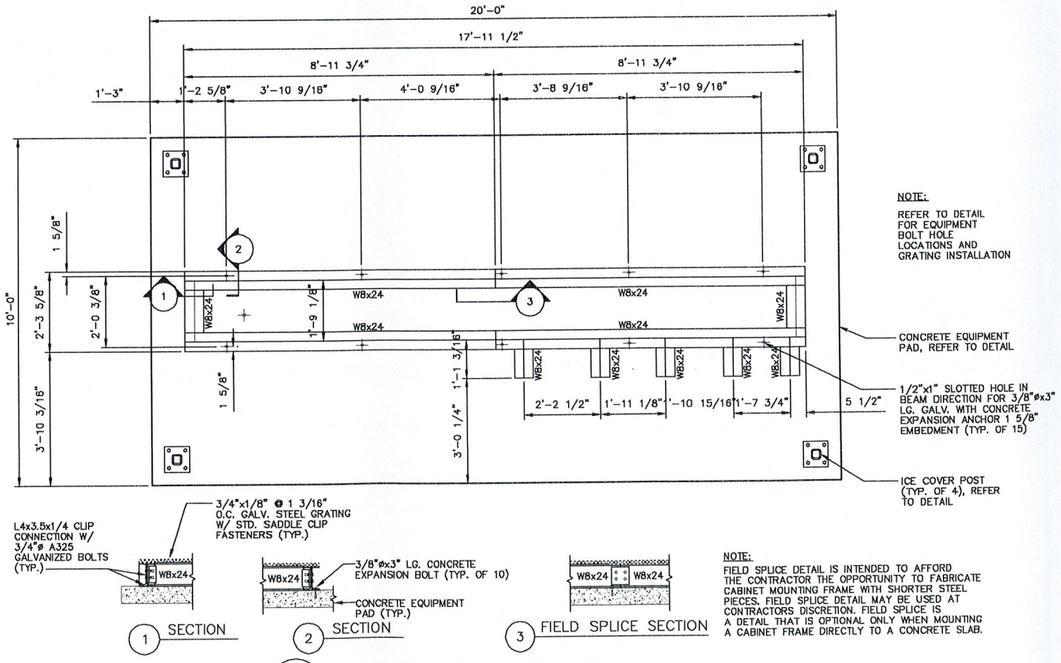
JOB NO.	DRAWING NUMBER	REV.
290A	C-1	0

290ASC1.dwg 3-22-01 1:22:10 pm EST



NOTE:
1. ALL BOLT HOLES SHALL BE SLOTTED 5/8"x 1 1/4".
2. DIMENSIONS SHOWN BOLD REFER TO IMPORTANT LAYOUT INFORMATION OF STEEL FRAME.

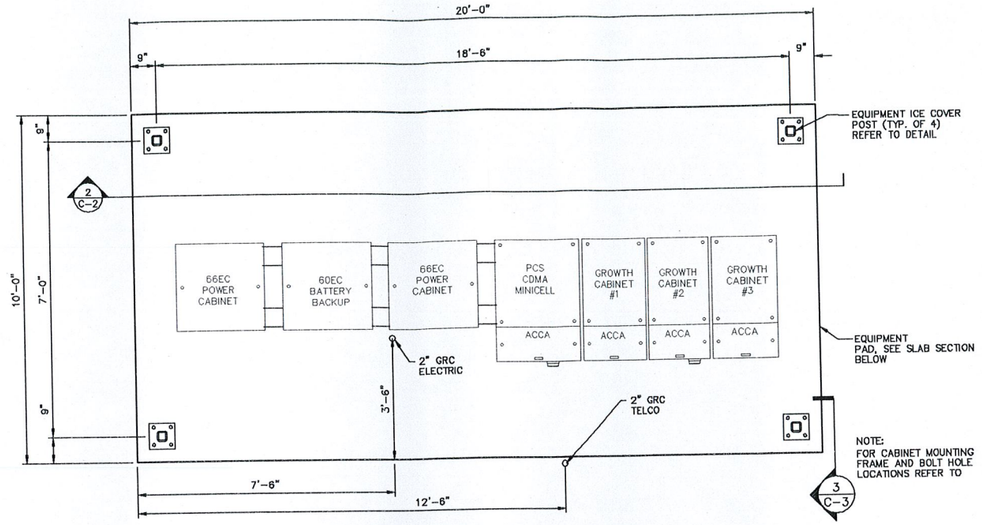
4 / C-2 CABINET HOLE LOCATION DETAIL
SCALE: 1/2" = 1'-0"



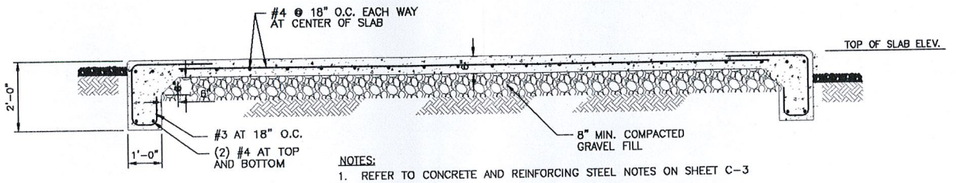
1 / C-2 SECTION
2 / C-2 SECTION
3 / C-2 FIELD SPLICE SECTION

NOTE:
FIELD SPLICE DETAIL IS INTENDED TO AFFORD THE CONTRACTOR THE OPPORTUNITY TO FABRICATE CABINET MOUNTING FRAME WITH SHORTER STEEL PIECES. FIELD SPLICE DETAIL MAY BE USED AT CONTRACTORS DISCRETION. FIELD SPLICE IS A DETAIL THAT IS OPTIONAL ONLY WHEN MOUNTING A CABINET FRAME DIRECTLY TO A CONCRETE SLAB.

5 / C-2 CABINET MOUNTING FRAME
SCALE: 1/2" = 1'-0"

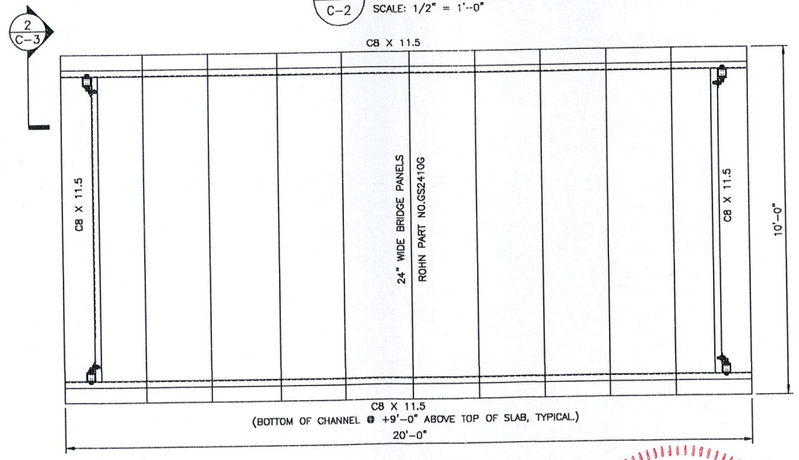


1 / C-2 EQUIPMENT PAD PLAN
SCALE: 1/2" = 1'-0"



NOTES:
1. REFER TO CONCRETE AND REINFORCING STEEL NOTES ON SHEET C-3
2. GRAVEL SHALL BE NATURAL OR CRUSHED GRAVEL WITH 100 PERCENT PASSING 1 INCH SIEVE.

2 / C-2 CAST IN PLACE SLAB DETAIL
SCALE: 1/2" = 1'-0"



3 / C-2 ICE BRIDGE EQUIP. COVER DETAIL
SCALE: 1/2" = 1'-0"

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NO.	DATE	REVISIONS	BY	CHK	APPV.
1	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFC

DRAWN BY: JBA | CHECKED BY: JJP | SCALE: AS NOTED | DATE: 01/25/01

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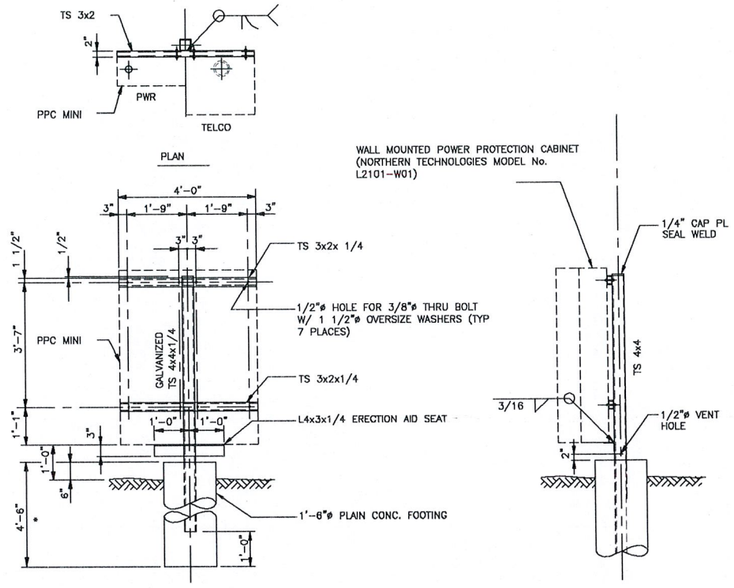
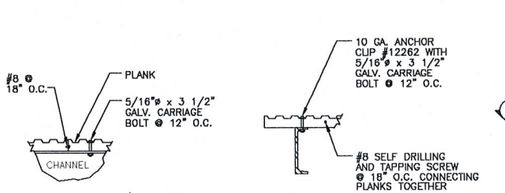
EQUIPMENT SUPPORT PLANS AND DETAILS

JOB NO.	DRAWING NUMBER	REV.
290A	C-2	0

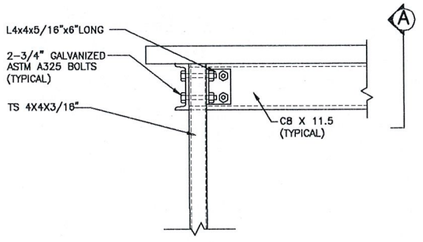
290ASC2.dwg 3-22-01 11:38 pm EST



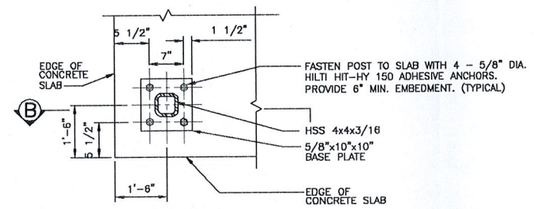
1 C-3 **PPC MINI MOUNTING FRAME DETAIL**
SCALE: 1/2" = 1'-0"



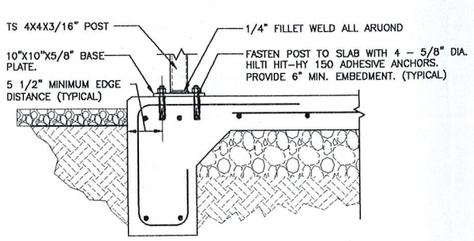
A C-3 **SECTION**
SCALE" 1/2" = 1'-0"



2 C-3 **ICE BRIDGE POST ELEVATION**
SCALE" 1/2" = 1'-0"



3 C-3 **BASE PLATE DETAIL**
SCALE" 1" = 1'-0"



B C-3 **SECTION**
SCALE" 1" = 1'-0"

GENERAL NOTES AND SPECIFICATIONS

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL COMPLY WITH THE LATEST ACCEPTED EDITION OF THE CONNECTICUT STATE BUILDING AND LIFE SAFETY CODES AND SUPPLEMENTS.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUB-- CONTRACTORS AND ALL RELATED PARTIES. THE SUB--CONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD--OUT WITH ALL STRUCTURAL, ELECTRICAL AND PCS COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON DRAWINGS OR WRITTEN IN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE THE DISTRIBUTION OF NEW DRAWINGS TO SUB--CONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. CONTRACTOR SHALL FURNISH 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
7. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUB--CONTRACTORS.
8. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
9. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB--CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR ARCHITECT.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON--SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
11. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ARCHITECT FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTAL TO THE ARCHITECT FOR REVIEW.
12. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
13. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING BUILDING AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
14. ANY DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ANY REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.

ANTENNA SUPPORT BRACKET NOTES

1. DESIGN RESPONSIBILITY OF ANTENNA MOUNTING BRACKETS AND POLES AND ALL ATTACHMENT SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER FOR REVIEW DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING PERTINENT LOADS AND DESIGN DATA. ALL SUBMISSIONS SHALL BEAR THE STAMP OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.
2. BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNA COAXIAL CABLES SHOWN.

DESIGN DATA

1. LIVE LOADS:
   WIND LOADS: PER EIA/TIA F-222
   ICE LOADS: 1/2" RADIAL ON ALL COMPONENTS AND CABLE.
   SNOW LOAD: 40 PSF
   SEISMIC LOAD: PER ASCE 7-95 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
2. DEAD LOADS:
   RADIO CABINET: 850 LBS.
   POWER CABINET: 1,800 LBS.
   GROWTH CABINET: 750 LBS.
   BATTERY CABINET: 2,880 LBS.
   WIREWAY: 40 LBS.

SITE NOTES

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. ALL RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED OFF SITE AND BE LEGALLY DISPOSED.
4. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE PCS EQUIPMENT AND TOWER AREAS.
5. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
6. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
7. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED WITH A MAXIMUM SLUMP OF 4", AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED BARS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS OTHERWISE NOTED ON THE DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.

   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. ALL EXPOSED EDGES OF CONCRETE TO RECEIVE A 3/4" CHAMFER IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. CONCRETE EQUIPMENT PAD TO RECEIVE A FLOAT FINISH
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT DURING DRILLING WITHOUT PRIOR REVIEW BY THE ENGINEER.

STEEL NOTES

1. PCS EQUIPMENT FRAME DESIGN AS SHOWN IS PROVIDED BY SPRINT PCS. CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. THE ENGINEER SHALL BE NOTIFIED OF ANY CONDITIONS WHICH PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
3. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED.
4. STEEL PIPE SHALL CONFORM TO ASTM A500, GRADE A, STEEL TUBING; OR ASTM A53,TYPE E OR S, GRADE B, BLACK PIPE. PIPE DIAMETERS NOTED ON THE DRAWINGS ARE NOMINAL.
5. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
6. ALL STEEL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIPPED GALVANIZED) COATINGS" ON IRON AND STEEL PRODUCTS.
7. ALL BOLTS ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE."
8. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
9. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES." ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONTRACTION" 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.

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SITE NO. : CT54XC716

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NO.	DATE	REVISIONS	BY	CHK	APPV.
4					
3					
2					
1					
A	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFC

DRAWN BY: JBA | CHECKED BY: JJP | SCALE: AS NOTED | DATE: 01/25/01

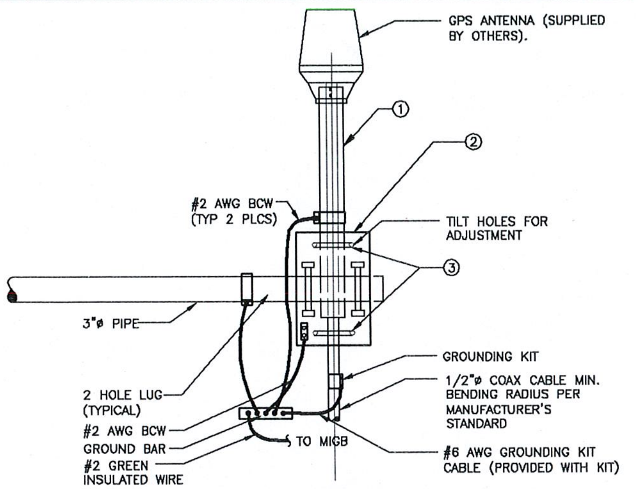
PROFESSIONAL ENGINEER SEAL

Sprint Spectrum LP

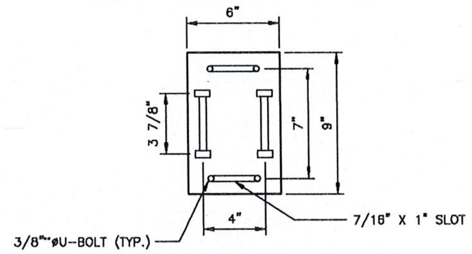
PPC, CONCRETE PAD DETAILS AND NOTES

JOB NO.	DRAWING NUMBER	REV.
290A	C-3	0

290ASC3.dwg 3-22-01 11:52 pm EST



GPS ANTENNA MOUNTING BRACKET



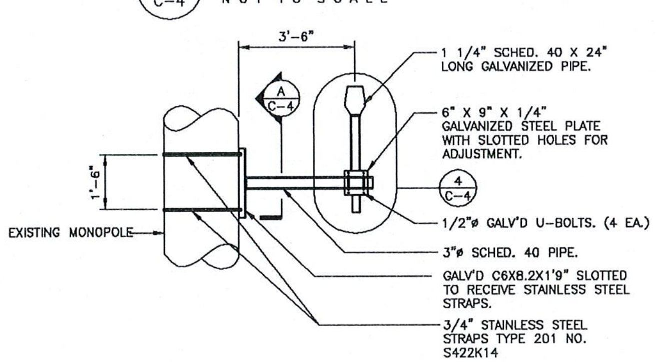
NOTE: OVERSIZE U-BOLT PROVIDED TO ALLOW ± 2° TILT/ADJUSTMENT TO ACHIEVE TOLERANCE.

BILL OF MATERIALS		
ITEM	DESCRIPTION	QUANTITY
①	1-1/4"ø SCH. 40 x 18" LG. MIN SS OR GALV. PIPE	1
②	PLATE 1/4 x 6 x 9" LG. GALV.(A-36)	1
③	STD. U-BOLT FOR 2"ø PIPE W/ DOUBLE HEX NUTS AND WASHER, GALV. (SEE NOTE 3)	2

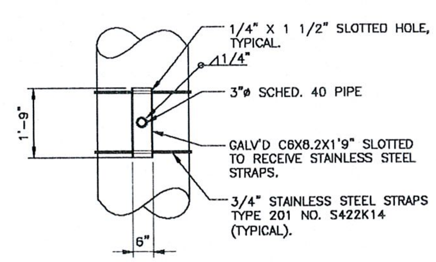
NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1-1/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 18 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
3. THE MOUNTING PLATE SHALL BE FABRICATED AS SHOWN AND ATTACHED TO THE APPROPRIATE SUPPORT STRUCTURE USING U-BOLTS. THE SUPPORT PIPE SHALL THEN BE ATTACHED TO THE MOUNTING PLATE USING THE OVERSIZE U-BOLTS PROVIDED TO ALLOW ADJUSTMENT. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.

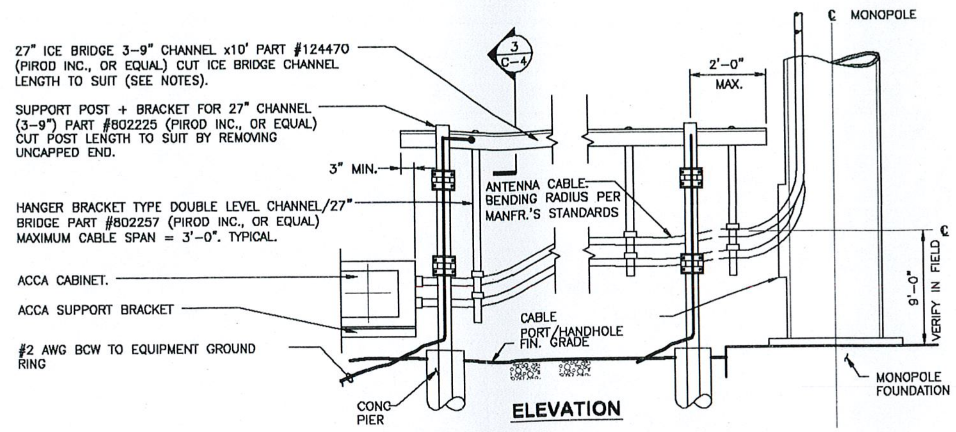
4/C-4 GPS MOUNTING BRACKET DETAIL
NOT TO SCALE



5/C-4 GPS MOUNTING DETAIL
NOT TO SCALE



A/C-4 DETAIL-"A"
NOT TO SCALE



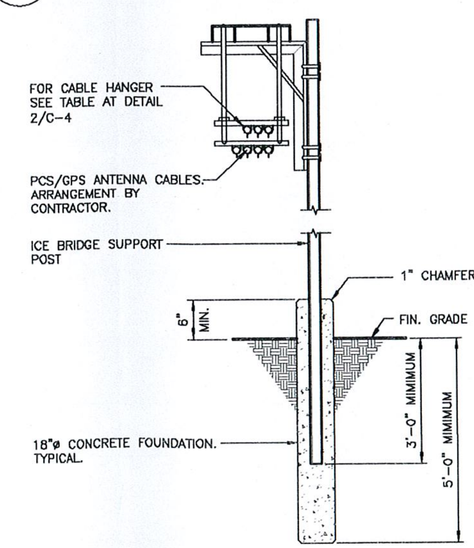
NOMINAL CABLE SIZE	CABLEWAVE CABLE TYPE NUMBER	ANDREW CABLE HANGER TYPE NUMBER	MANUF. MIN. BEND RADIUS
1/2"	810918-001	43211	5"
7/8"	N/A	N/A	N/A
1 1/4"	N/A	N/A	N/A
1 5/8"	810920-001	915661	20"

3/8" FILLISTER-HEAD BOLTS, LOCKWASHERS AND NUTS FOR ATTACHMENT OF CABLE HANGERS TO SUPPORT BRACKET. (ANDREWS HARDWARE KIT TYPE NUMBER 31769-5 ~ QUANTITY AS REQUIRED).

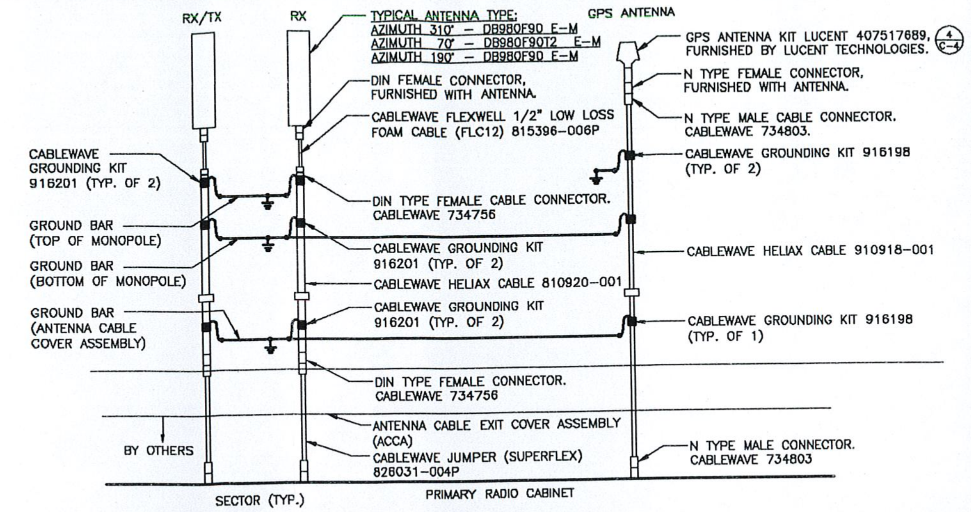
NOTES:

1. WHEN USING PIROD COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 19 FEET FOR 20 FEET BRIDGE CHANNEL OR 9 FEET FOR 10 FEET BRIDGE CHANNEL.
2. WHEN USING PIROD COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING PIROD COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHOULD HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM MANUFACTURERS OTHER THAN PIROD, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS SHOWN ON SITE SPECIFIC DRAWINGS OR STANDARD DETAILS REQUIRE ENGINEERING APPROVAL.

2/C-4 ICE BRIDGE DETAIL
NOT TO SCALE



3/C-4 SUPPORT POST DETAIL
NOT TO SCALE



FROM/TO	AZIMUTH 310° DOWNTILT = 0°			AZIMUTH 70° DOWNTILT = 0°			AZIMUTH 190° DOWNTILT = 0°			GPS ANTENNA	
	COAX CABLE TYPE/SIZE	LENGTH (FT) RX/TX	LENGTH (FT) RX	COAX CABLE TYPE/SIZE	LENGTH (FT) RX/TX	LENGTH (FT) RX	COAX CABLE TYPE/SIZE	LENGTH (FT) RX/TX	LENGTH (FT) RX	COAX CABLE TYPE/SIZE	LENGTH (FT) GPS
ANTENNA TO ANTENNA CABLE (TOP JUMPERS)	1/2"	6	6	1/2"	6	6	1/2"	6	6	N/A	N/A
ANTENNA TO ANTENNA CABLE COVER ASSEMBLY	1 5/8"	170	170	1 5/8"	170	170	1 5/8"	170	170	1/2"	100
ANTENNA CABLE COVER ASSEMBLY TO PRIMARY RADIO CABINET	1/2"	4	4	1/2"	4	4	1/2"	4	4	1/2"	N/A

NOTES:
1. TYPES AND SIZES OF THE ANTENNA CABLES ARE BASED ON THE ESTIMATED LENGTH OF THE CABLES. CONTRACTOR TO VERIFY THE ACTUAL LENGTHS IN THE FIELD BEFORE INSTALLATION AND NOTIFY THE FIELD ENGINEER FOR VERIFICATION OF SIZES OF THE CABLES.
2. FIELD ENGINEER TO UPDATE THE LENGTH OF CABLES ON AS-BUILT DRAWINGS.

1/C-4 TYPICAL ANTENNA CONFIGURATION
NOT TO SCALE

THIRD PARTY BILL OF MATERIALS

SITE NAME: BOTSFORD — **SITE NO.: CT54XC716**

	ITEM NO.	DESCRIPTION	QUANTITY (EACH)	LENGTH (FEET EACH)	TOTAL LENGTH
	1	ANTENNAS: SECTORS 1&3- DECIBEL DB980F90E-M W/ H.D. CLAMPS SECTOR 2- DECIBEL DB980F90T2E-M W/ H.D. CLAMPS GPS - LUCENT No. 407517689	6 1	N/A N/A	N/A N/A
	2	JUMPER CABLES: TOP JUMPER (CABLEWAVE FLEXWELL 1/2" LOW LOSS FOAM CABLE (FLC12) 815396-006P) BOTTOM JUMPER (CABLEWAVE FLEXWELL 1/2" SUPERFLEXIBLE CABLE (S-FLC12) 826031-004P)	6 6	6 6	N/A N/A
	3	MAIN CABLES: 1/2" DIA. HELIAX COAXIAL (CABLEWAVE 810918-001) 1-5/8" DIA. HELIAX COAXIAL (CABLEWAVE 810920-001)	1 6	CUT TO LENGTH IN FIELD	100 1020
	4	GROUNDING KITS & 2-HOLE LUGS FOR: 1/2" CABLE (CABLEWAVE 915870-003) 1/2" 60"CABLE (CABLEWAVE 916198) 1-5/8" CABLE (CABLEWAVE 915870-008) 1-5/8" 60"CABLE (CABLEWAVE 916201)	N/A 3 N/A 18	N/A N/A N/A N/A	N/A N/A N/A N/A
	5	CONNECTORS - UNATTACHED FOR GPS & MAIN CABLES: MALE "N" 1/2" (CABLEWAVE 734803) FEMALE "DIN" 1-5/8" (CABLEWAVE 73475b)	2 12	N/A N/A	N/A N/A
	6	TOWER: 150' PIROD MONOPOLE. BY OTHERS.	EXISTING	N/A	N/A
	7	PPC MINI, IN LINE TYPE AS MANUFACTURED BY NORTHERN TECHNOLOGIES, MODEL No. LL1101-W01. NOTE: REPLACE ONE (1) DOUBLE POLE 60 AMP BREAKER WITH TWO (2) SINGLE POLE 20 AMP BREAKERS.	1	N/A	N/A
	8	ANTENNA COVER ASSEMBLY (ACCA)	1	N/A	N/A
*	9	SPLIT COMPRESSION BUSHING, LUCENT PART # 303394	7	N/A	N/A
*	10	EQUIPMENT PLATFORM PER DETAIL 1/C-2	1	N/A	N/A
*	11	ICE BRIDGE EQUIPMENT COVER PER DETAIL 3/C-2	1	N/A	N/A
*	12	GPS MOUNTING BRACKET PER DETAIL 4/C-4	1	N/A	N/A
*	13	PRECAST CONCRETE EQUIPMENT PAD PER DETAIL 2/C-2	1	N/A	N/A
*	14	PPC MINI MOUNTING FRAME PER DETAIL 1/C-3	1	N/A	N/A
*	15	TELEPHONE CABLE: TERMINAL BLOCK TO DMARC - BY OTHERS DMARC TO PPC - 1-25 TWISTED PAIR, 24 AWG SOLID WIRE PPC TO ACCA - 1-25 TWISTED PAIR, 24 AWG SOLID WIRE	N/A 1 1	FIELD CUT TO LENGTH	N/A 60 20
*	16	ANTENNA MOUNTING FRAME AND ACCESSORIES: LOW PROFILE ROTATABLE ANTENNA PLATFORM COORDINATE WITH TOWER MANUFACTURER	AS REQUIRED	N/A	N/A

NOTES:
1. ITEMS LISTED ABOVE ARE TO BE SUPPLIED BY THE OWNER, UNLESS OTHERWISE NOTED.
2. ITEMS 3 AND 5 ARE TO BE FIELD FABRICATED BY THE CONTRACTOR.
3. ITEMS 9 THROUGH 16 ARE TO BE PROVIDED BY THE CONTRACTOR.
4. ALL ITEMS INSTALLED BY CONTRACTOR.

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0	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFO

DRAWN BY: P.A.M. | CHECKED BY: JBA | SCALE: AS NOTED | DATE: 01/25/01

PROFESSIONAL ENGINEER SEAL: STATE OF CONNECTICUT, CARLO F. CENTORE, No. 16694, LICENSED PROFESSIONAL ENGINEER

Sprint Spectrum LP
DETAILS AND THIRD PARTY BILL OF MATERIALS

JOB NO.	DRAWING NUMBER	REV.
290A	C-4	0

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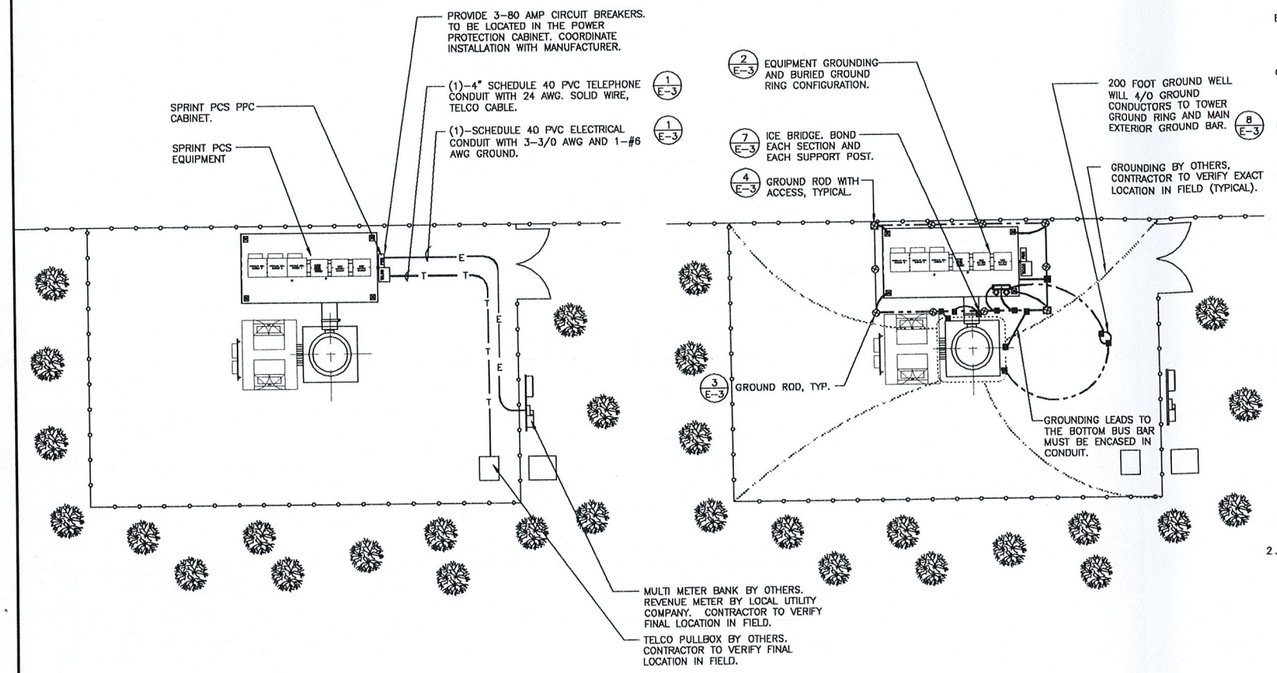

1/E-1 **PARTIAL UTILITY SITE PLAN** — SCALE: 1" = 10'-0" — NORTH

2/E-1 **PARTIAL GROUNDING PLAN** — SCALE: 1" = 10'-0" — NORTH

ELECTRICAL NOTES

1. GENERAL REQUIREMENTS

   A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY. NOTHING ON THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT ON SUCH CODES OR REGULATIONS.

   B. THE CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH THE SPRINT PCS REPRESENTATIVE, THE ENGINEER, AND OTHER AUTHORITIES HAVING JURISDICTION OVER TRADES.

   C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAYMENT OF APPLICABLE FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.

   D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE OWNER OF ANY NEW AND/OR DEMOLITION WORK ASSOCIATED WITH THE TOWER OWNER AND ITS LEASORS.

   E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LOCAL TELEPHONE COMPANY AS MAY BE REQUIRED FOR INSTALLATION OF TELEPHONE SERVICE TO THE PROPOSED SITE.

   F. NO MATERIAL, OTHER THAN THAT CONTAINED IN THE MOST CURRENT LIST OF ELECTRICAL FITTINGS APPROVED BY THE UNDERWRITERS LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.

   G. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE (1) YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE SPRINT PCS.

   H. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. THE CONTRACTOR, WITHOUT ADDITIONAL CHARGE, MAKE REASONABLE MODIFICATIONS TO THE LAYOUT WORK TO PREVENT CONFLICT WITH THE WORK OF OTHER TRADES AND FOR A PROPER INSTALLATION OF THE WORK. PRIOR TO SUBMITTAL OF THE BID THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND VISIT THE JOB SITE TO VERIFY THE CONDITIONS UNDER WHICH THE WORK WILL BE DONE.

   I. ALL WORK SHALL BE INSTALLED IN A NEAT WORKMANLIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE SPRINT PCS REPRESENTATIVE.

   J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW UNLESS OTHERWISE NOTED.

   K. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS, LEGIBLY MARKED IN RED PENCIL, SHOWING ALL CHANGES FROM THE ORIGINAL PLANS.

   L. PROVIDE TEMPORARY POWER AND LIGHTING AS REQUIRED BY THE WORK.

2. SCOPE OF WORK

   A. THE WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE (MAKE READY FOR OPERATION) ALL THE ELECTRICAL WORK, BUT NOT LIMITED TO THE FOLLOWING:

      1. TIE-IN FEEDER TO EXISTING 200 AMP, 120/240V SINGLE PHASE, 3-WIRE SERVICE METER SOCKET.

      2. FEEDERS AND BRANCH WIRING TO PANELS, EQUIPMENT, ETC. AS NOTED ON THE PLANS.

      3. TELEPHONE SERVICE CONDUIT AND CABLE.

      4. CELLULAR GROUNDING SYSTEM CONSISTING OF THE GROUND RING, TIE-IN TO THE EXISTING GROUNDING RING, GROUND BARS, ETC.

   B. LOCAL UTILITY COMPANIES SHALL PROVIDE THE FOLLOWING:

      1. REVENUE METER.

      2. TELEPHONE SERVICE TIE-IN.

   C. THE CONTRACTOR SHALL CONFER WITH THE LOCAL UTILITY COMPANIES TO ASCERTAIN THE LIMITS OF THEIR WORK AND SHALL INCLUDE IN THE BID ANY CHARGES OR FEES MADE BY THE UTILITY COMPANIES FOR THEIR PORTION OF THE WORK.

3. GROUNDING

   A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO EQUIPMENT GROUNDING SOURCES.

   B. THE GROUNDING SYSTEM SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND THE LOCAL AUTHORITIES HAVING JURISDICTION.

   C. GROUNDING OF PANELBOARDS:

      1. PANEL BOARDS SHALL BE GROUNDED BY TERMINATING THE PANELBOARD FEEDERS' EQUIPMENT GROUND CONDUCTOR TO THE EQUIPMENT GROUND BAR KIT(S) LUGGED TO THE CABINET. ENSURE THAT THE SURFACE BETWEEN THE KIT AND CABINET ARE BARE METAL TO BARE METAL. PRIME AND PAINT OVER TO PREVENT CORROSION.

      2. CONDUIT(S) TERMINATING INTO THE PANELBOARD SHALL HAVE GROUNDING TYPE BUSHINGS. THE BUSHINGS SHALL BE BONDED TOGETHER WITH BARE COPPER CONDUCTOR WHICH IS IN TURN TERMINATED INTO THE PANELBOARD'S EQUIPMENT GROUND BAR KIT(S).

   D. EQUIPMENT GROUNDING CONDUCTOR:

      1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH N.E.C. ARTICLE 250-122.

      2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE NO. 12 AWG COPPER.

      3. EACH FEEDER OR BRANCH CIRCUIT SHALL HAVE EQUIPMENT GROUND CONDUCTOR(S) INSTALLED IN THE SAME RACEWAY(S).

   E. CELLULAR GROUNDING SYSTEM:

      1. THE CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHMS BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY A THREE POINT GROUND TEST.

      2. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON THE DRAWINGS; INCLUDING, BUT NOT LIMITED TO:

         - PROTECTION OF THE EXISTING GROUNDING SYSTEM DURING CONSTRUCTION.
         - EXTERIOR GROUNDING RING.
         - GROUND BARS.
         - GROUNDING CONNECTIONS.

4. VISUAL INSPECTION OF EXTERIOR/INTERIOR GROUNDING GRID SYSTEMS

   A. UPON COMPLETION OF THE GROUNDING SYSTEM, BUT PRIOR TO CONCEALMENT AND/OR BURIAL, THE CONTRACTOR SHALL NOTIFY THE SPRINT PCS REPRESENTATIVE. THE SPRINT PCS REPRESENTATIVE WILL ARRANGE FOR A SITE VISIT WITH THE PROJECT ENGINEER FOR A VISUAL INSPECTION OF THE GROUNDING GRID, RODS AND CONNECTIONS.

5. TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

   A. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM HAVING A MINIMUM OF 5 YEARS EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY. THE FOLLOWING TESTS SHALL BE PERFORMED AS OUTLINED ON THE DRAWINGS AND SPECIFICATIONS:

      1. RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM AS MEASURED BY THE THREE POINT GROUNDING TEST.

   B. THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

      1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF THE TESTING EQUIPMENT.

      2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.

      3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

   C. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF THE SPRINT PCS REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE SPRINT PCS REPRESENTATIVE AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

   D. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT TESTING FIRM REPORT/ANALYSIS TO THE ENGINEER A MINIMUM OF 10 WORKING DAYS PRIOR TO THE PROJECT TURNOVER.

   E. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO SPRINT PCS AND THE ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
— — — —	NEW GROUND RING
-T——T-	UNDERGROUND COMMUNICATION CONDUIT AS INDICATED
-E——E-	UNDERGROUND ELECTRICAL CONDUIT AS INDICATED
	GROUND BAR
—o—o—	PERIMETER CHAIN LINK FENCE
⊗	5/8" DIAMETER x 10'-0" COPPER GROUND ROD
⊠	5/8" DIAMETER x 10'-0" COPPER GROUND ROD WITH ACCESS
■	CADWELD CONNECTION

GENERAL NOTES

1. REFER TO DRAWING C-1 FOR ACTUAL LOCATIONS OF STRUCTURES ON SITE.
2. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
3. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING GROUND RING IN FIELD.
4. ALL GROUNDING CONNECTIONS MADE THROUGHOUT THESE DRAWINGS SHALL BE MADE WITH THOMAS AND BETTS KOPR-SHIELD (TM OF JET LUBE, INC.), OR EQUIVALENT ANTI-OXIDATION COMPOUND. COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
5. BOND ICE BRIDGE AND ICE BRIDGE POSTS TO GROUND RING.
6. THE CONTRACTOR SHALL PROVIDE GROUND RESISTANCE TESTING PER THE SPECIFICATION FOR THE SPRINT PCS EQUIPMENT AND TOWER GROUND RINGS.
7. RECORD GROUND RESISTIVITY TEST RESULTS ON SPRINT PCS "GROUND RESISTIVITY TEST FORM".

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UTILITY PLANS AND NOTES

JOB NO.	DRAWING NUMBER	REV.
290A	E-1	0

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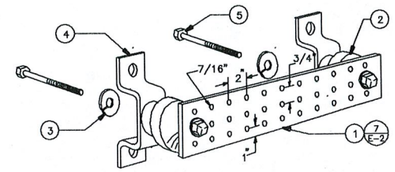
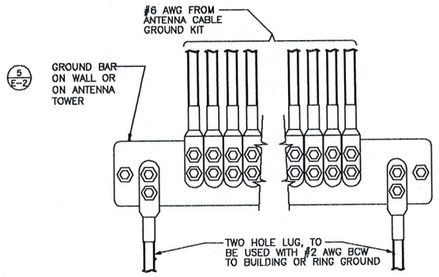


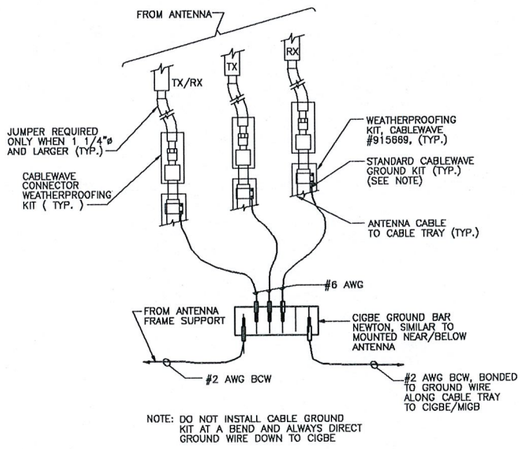
LEGEND

1. COPPER GROUND BAR, 1/4"X 4"X 20", NEWTON INSTRUMENT CO. CAT. NO.B-6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
5. 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

4 GROUND BAR DETAIL
E-2 NOT TO SCALE

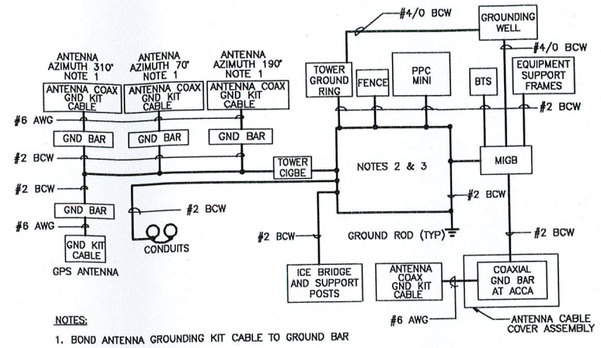


5 INSTALLATION OF GROUND WIRE TO GROUND BAR
E-2 NOT TO SCALE



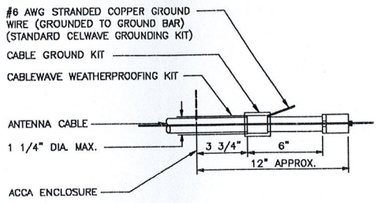
NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

6 CONNECTION OF GROUND WIRES TO GROUNDING BAR
E-2 NOT TO SCALE



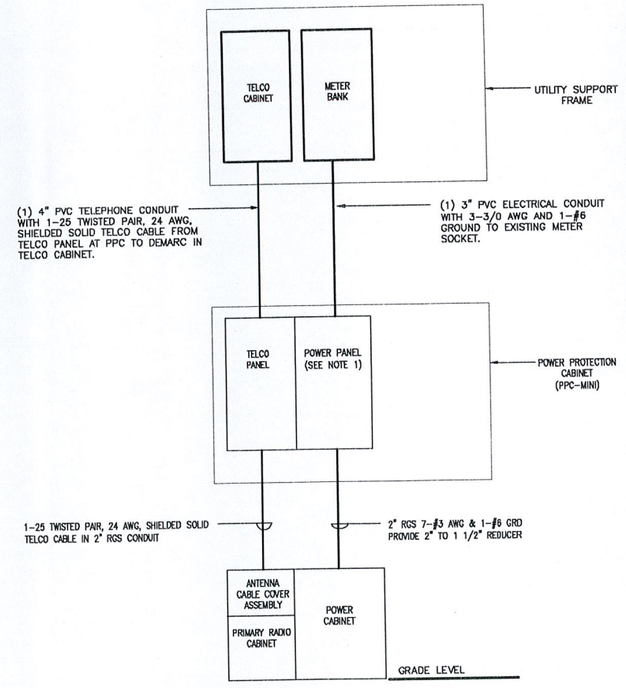
NOTES:
1. BOND ANTENNA GROUNDING KIT CABLE TO GROUND BAR
2. RING GROUND FOR EQUIPMENT.
3. FOR GROUNDING CONNECTION & DETAILS, SEE LAYOUT DRAWINGS.

2 SCHEMATIC DIAGRAM - GROUNDING SYSTEM
E-2 NOT TO SCALE



NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

3 CABLE GROUND ANTENNA DETAIL
E-2 NOT TO SCALE



LOAD DATA	
CONNECTED LOAD	110 AMP MAX
RUNNING LOAD	82 AMPS

NOTE: 1. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY PPC MANUFACTURER.

1 ELECTRICAL SERVICE RISER DIAGRAM
E-2 NOT TO SCALE

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ELECTRICAL DETAILS

JOB NO.	DRAWING NUMBER	REV.
290A	E-2	0

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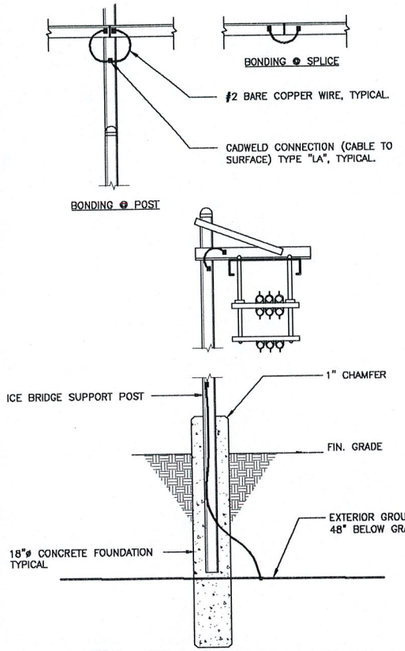
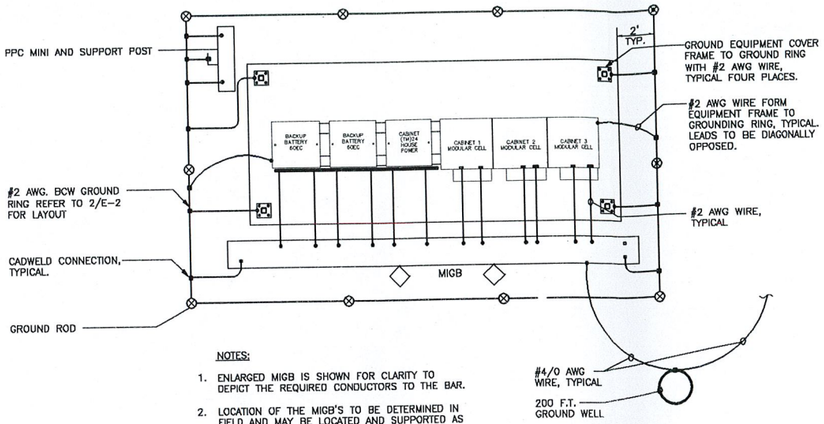


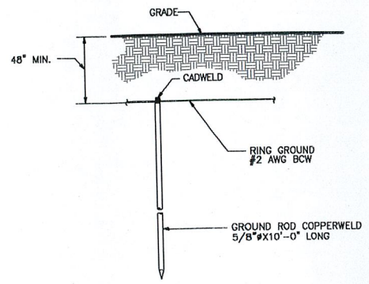
7 E-3 **ICE BRIDGE BONDING DETAIL**
NOT TO SCALE



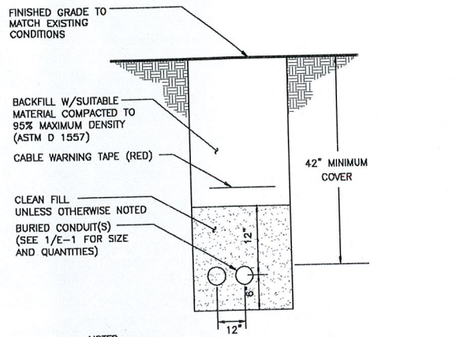
NOTES:

1. ENLARGED MIGB IS SHOWN FOR CLARITY TO DEPICT THE REQUIRED CONDUCTORS TO THE BAR.
2. LOCATION OF THE MIGB'S TO BE DETERMINED IN FIELD AND MAY BE LOCATED AND SUPPORTED AS CLOSE TO EQUIPMENT AS FEASIBLE AND PRACTICAL TO ACHIEVE THE DESIGNED CONFIGURATION.
3. NUMBER OF GROUNDING RODS BASED ON MINIMUM 5 OHMS GROUND RESISTIVITY.

5 E-3 **EXTERIOR EQUIPMENT GROUNDING CONFIGURATION**
NOT TO SCALE



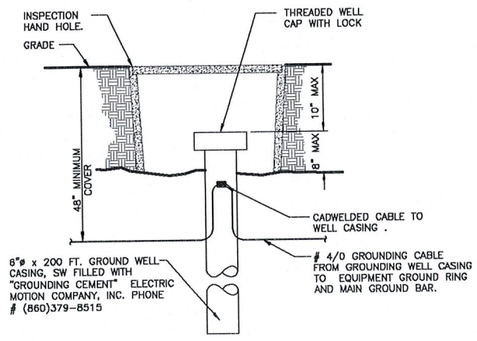
3 E-3 **GROUND ROD DETAIL**
NOT TO SCALE



NOTES

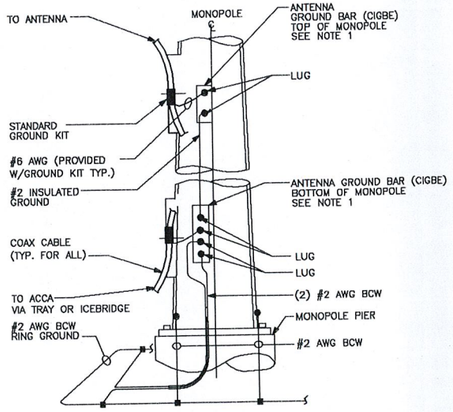
1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

1 E-3 **ELECTRICAL/TELCO TRENCH DETAIL**
NOT TO SCALE



NOTE: INSPECTION HAND HOLE MAY BE CONCRETE OR PVC AND SHALL BE A MINIMUM OF 12" DIA X 18" DEEP.

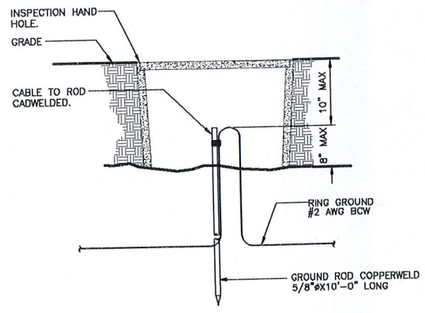
8 E-3 **GROUNDING WELL DETAIL**
NOT TO SCALE



NOTE:

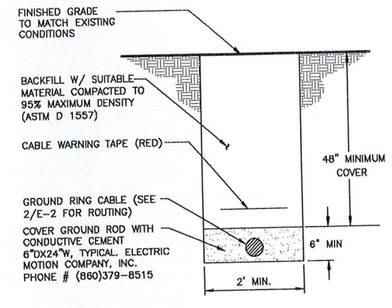
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

6 E-3 **ANTENNA CABLE GROUNDING - MONOPOLE**
NOT TO SCALE



NOTE: INSPECTION HAND HOLE MAY BE CONCRETE OR PVC AND SHALL BE A MINIMUM OF 12" DIA X 18" DEEP.

4 E-3 **GROUND ROD WITH ACCESS DETAIL**
NOT TO SCALE



NOTES

1. BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

2 E-3 **DIRECT BURIAL GROUND CABLE DETAIL**
NOT TO SCALE

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STATE OF CONNECTICUT · DEPARTMENT OF CENTRAL PROCUREMENT · No. 6694 · LICENSED PROFESSIONAL ENGINEER

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ELECTRICAL DETAILS

JOB NO.	DRAWING NUMBER	REV.
290A	E-3	0

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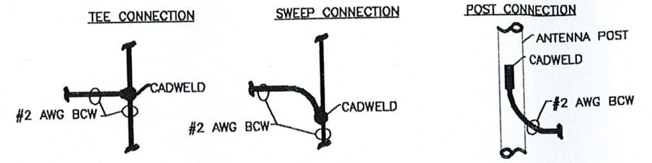
CELL SITE INSTALLATION NOTES:

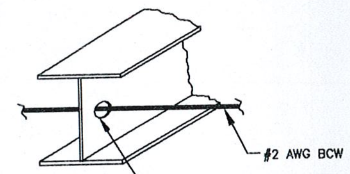
THE FOLLOWING INSTALLATION NOTES HAVE BEEN COMPILED FROM THE EXISTING PROJECT DOCUMENTS (I.E. PROJECT SPECIFICATIONS, SPRINT STANDARD PRACTICE, LUCENT DOCUMENTS, ETC.) FOR USE. THESE NOTES SHALL BE UTILIZED FOR THE CONSTRUCTION OF THE CELL SITES TO ENSURE COMPLIANCE WITH THE PROJECT DESIGN AND SPECIFICATION REQUIREMENTS.

A. GROUNDING:

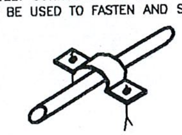
1. ALL METAL CONDUIT FOR GROUNDING DOWN CONDUCTORS SHALL BE BONDED TO THE GROUND SYSTEM AT BOTH ENDS.
2. GROUNDING CONDUCTORS SHALL BE CONNECTED TO THE MAIN WATER PIPE USING A BURNDY TYPE GAR-TC CLAMP.
3. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
4. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE CADWELD ® PROCESS.
5. ALL CADWELDS ® SHALL BE INSTALLED USING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR CONNECTION AND/OR APPLICATION.



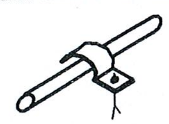
6. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE MINIMUM OF 3/8" DIAMETER AND SHALL BE STAINLESS STEEL.
7. GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.



8. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS.
   - PLASTIC CLIPS



   - METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR



9. STANDARD BUSS BARS (CIGBES AND MIGBS) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
10. THE GROUNDING CONNECTION TO THE POWER AND TELCO CABINETS OF THE PPC SHALL BE MADE BY CONNECTING THE CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED BUSS BAR IN EACH COMPARTMENT.
11. ALL GROUNDING WIRES SHALL BE INSTALLED WITHOUT LOOPS (PIGTAILS) AND SHARP BEND RADIUS.

B. ANTENNA COAXIAL CABLES (WAVEGUIDE)

NOTE: THE RF TRANSMISSION LINE INSTALLED BETWEEN THE PRIMARY RADIO CABINET (PRC), FURNISHED BY LUCENT, AND THE ANTENNA CONSISTS OF A COAXIAL CABLE, SOMETIMES REFERRED TO AS A WAVEGUIDE.

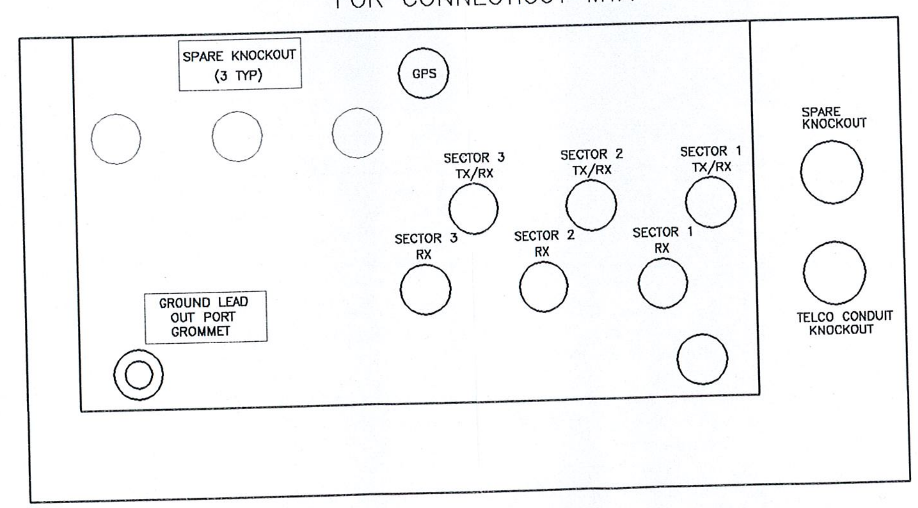
1. ALL ANTENNA COAXIAL CABLES AND JUMPERS SHALL BE INSTALLED WITHOUT LOOPS AND/OR PIGTAILS.
2. ANTENNA COAXIAL CABLE GROUND KITS SHALL NOT BE INSTALLED ON THE JUMPER BETWEEN THE ANTENNA AND MAIN LINE CABLE.
3. ANTENNA COAXIAL CABLE GROUND KITS SHALL BE INSTALLED AS CLOSE TO THE CONNECTOR AS POSSIBLE AT EACH ANTENNA. IF THIS IS NOT FEASIBLE THE GROUND KIT SHALL BE INSTALLED IMMEDIATELY AFTER THE BEND ON THE FIRST STRAIGHT RUN OF CABLE. THE GROUND KIT SHALL BE INSTALLED ON STRAIGHT SECTION OF CABLE ONLY AND NOT ON BENDS.
4. ANTENNA COAXIAL CABLE SHALL BE INSTALLED TO COMPLY WITH THE MANUFACTURE'S MINIMUM BEND RADIUS SPECIFIED BELOW. THE CONTRACTOR SHALL INSTALL RACEWAY FOR COAXIAL CABLE USING THE PROPER FITTINGS NECESSARY TO ENSURE THAT THE MINIMUM BEND RADIUS REQUIREMENTS ARE MET. (REFERENCE: TECHNICAL INFORMATION BULLETIN NO. 96-026)

COAXIAL CABLE MINIMUM BEND RADIUS

MANUFACTURER	CABLE TYPE	CABLE SIZE (DIAMETER)	MINIMUM BEND RADIUS IN TRAY	MINIMUM BEND RADIUS IN 4" OR 6" CONDUIT
ANDREWS	LDF4-50A	1/2"	5"	10"
ANDREWS	LDF5-50A	7/8"	10"	18"
ANDREWS	LDF6-50A	1 1/4"	15"	22"
ANDREWS	LDF7-50A	1 5/8"	20"	28"
CABLEWAVE	FLC 12-50J	1/2"	5"	10"
CABLEWAVE	FLC 78-50J	7/8"	10"	18"
CABLEWAVE	FLC 114-50J	1 1/4"	15"	22"
CABLEWAVE	FLC 158-50J	1 5/8"	20"	28"

5. THE GPS ANTENNA COAXIAL CABLE SHALL BE A CONTINUOUS CABLE RUN, FROM THE CONNECTOR AT THE ANTENNA HEAD TO THE CONNECTION AT THE BTS CABINET, WITHOUT JUMPERS.
6. THE ANTENNA COAXIAL CABLE AT THE BTS SHALL BE INSTALLED IN THE ANTENNA CABLE COVER ASSEMBLY (ACCA) IN ACCORDANCE WITH DETAIL 513. THE FINISHED ANTENNA CABLES (WITH CONNECTOR AND GROUND KIT INSTALLED) SHALL BE INSTALLED SO THAT THE END OF THE CONNECTOR PROTRUDES NO FARTHER THAN 12 INCHES INTO THE ACCA.
7. THE COAXIAL CABLE ENTRY HATCHPLATE ON THE REAR OF THE ACCA SHALL BE INSTALLED WITH THE SMALL 1/2" DIAMETER HOLES (FOR THE GPS ANTENNA AND GROUND WIRES) TO THE RIGHT (WHEN FACING THE ACCA FROM THE REAR OF THE PRC).
8. ALL ANTENNA COAXIAL CABLES SHALL BE MARKED AND TAGGED IN ACCORDANCE WITH THE REQUIREMENTS IN PROJECT SPECIFICATION G-002, SECTION 16000, PARAGRAPHS 36 AND 37. THE FIGURE BELOW INDICATES AN EXAMPLE OF THE COLOR CODE MARKED ON THE COAXIAL CABLES FOR THE CONNECTICUT MTA.
9. SINCE THERE ARE A NUMBER OF DIFFERENT COAXIAL CABLE ENTRY HATCHPLATES THAT MAY BE SUPPLIED WITH THE ACCA, THE CONTRACTOR SHALL ORIENT THE COAXIAL CABLE ENTRANCE INTO THE ACCA IN ACCORDANCE WITH THE DIRECTION ISSUED BY EACH MTA. THE FIGURE SHOWN BELOW INDICATES THE PROPER ORIENTATION FOR THE COAXIAL CABLE ENTRANCE INTO THE ACCA FOR THE CONNECTICUT MTA.

HATCH PLATE/BOOT ON REAR OF ACCA
FOR CONNECTICUT MTA



C. ELECTRICAL:

1. THE ELECTRICAL RACEWAY INSTALLED FROM THE MINI-PPC TO THE PRIMARY RADIO CABINET, FURNISHED BY LUCENT, SHALL HAVE AN 1 1/4" MALE CONNECTOR/REDUCER FOR THE TIE TO THE ELECTRICAL FITTING ON THE CABINET. THIS MAY BE ACCOMPLISHED USING EITHER A 1 1/4" CONDUIT, 1 1/4" FLEXIBLE CONDUIT OR AN 1 1/4" BUSHING.

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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

BOTSFORD
201 SOUTH MAIN STREET
NEWTOWN, CONNECTICUT 06470
SITE NO. : CT54XC716

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

NO.	DATE	REVISIONS	BY	CHK	APPV.
△					
△					
△					
△					
A	03/22/01	ISSUED FOR SITING COUNCIL	P.A.M.	JJP	CFC

DRAWN BY: JBA | CHECKED BY: JJP | SCALE: AS NOTED | DATE: 01/25/01

PROFESSIONAL ENGINEER SEAL — STATE OF CONNECTICUT, CARLO CENTORE, No. 16694, LICENSED PROFESSIONAL ENGINEER

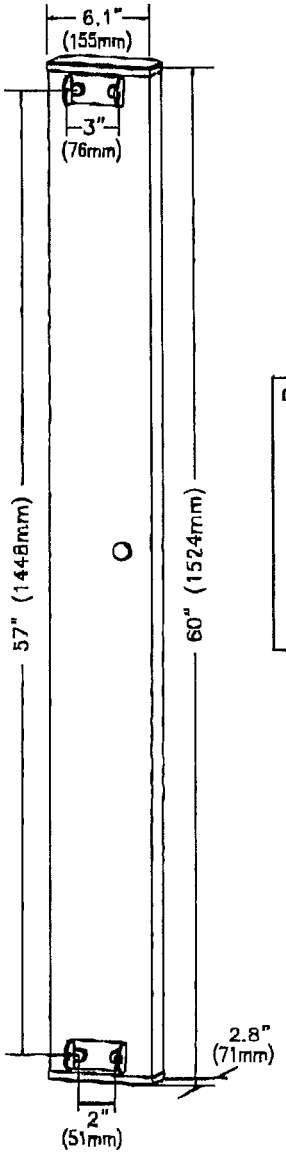
Sprint Spectrum LP
CELLULAR INSTALLATION NOTES

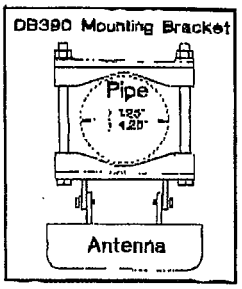
JOB NO.	DRAWING NUMBER	REV.
290A	E-4	0

DB980F90(E/A) { -M: 1850 - 1990 MHz / -KL: 1710 - 1880 MHz

90°, 14.3 dBd Panel Antenna

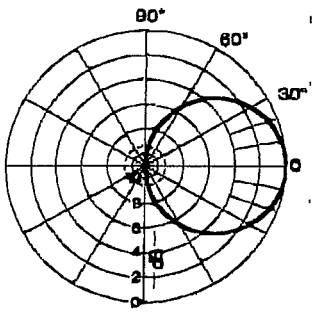
Model Number	DB980F90E-M/-KL	DB980F90A-M/-KL
Connector Options	7-16 DIN (Bottom)	7-16 DIN (Back)
Frequency Range	-M: 1850 - 1990 MHz -KL: 1710-1880 MHz	
Gain	14.3 dBd (16.4 dBi)	
VSWR	< 1.4 : 1	
Beamwidth (3 dB from max.)	Horizontal: 90° ± 5° Vertical: 6° ± .5°	
Upper Side Lobe Supression	18 dB	
Null Fill	-11 dB (typ.); -15 dB (min.)	
Front-to-Back Ratio	> 25 dB	
Polarization	Vertical	
Max. Input Power	250 Watts	
Application	PCS or DCS1800	
Weight	8.5 lb. (4.0 kg)	
Wind Area	2.5 ft² (0.24 m²)	
Wind Load	100 lbf (445N) 44.9 kp (at 100 mph)	
Max. Wind Speed	125 mph (201 km/h)	
Material	Back Panel: Pass. Aluminum Radiators: Brass Radome: PVC, UV Resistant Mounting Hdw: Galvanized Steel	
Color	Gray	
Mounting (Included)	DB390 pipe mount kit (bottom connector). DB391 pipe mount kit (back connector).	
Optional Brackets	DB5094-AZ Wall/Azimuth bracket. DB5098 and DB5099 downtilt brackets.	
Weather Protection	Fully protected by backplate and radome.	
Lightning Protection	All metal parts grounded.	
Packing Size	72" x 7" x 6" (183 x 18 x 15 cm)	
Shipping Weight	15 lb. (6.8 kg)	

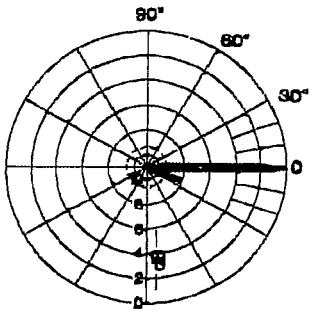




14.3 dBd (16.4 dBi) Gain Directional Antenna with 90° horizontal 3 dB beamwidth for 1850-1990 MHz.

Antenna Patterns





Electrical Downtilt (T) Option

Model Number	Downtilt	Gain (Main Lobe)
980F90T2E-M/-KL	2°	14.3 dBd
980F90T2A-M/-KL	2°	14.3 dBd

Specifications are for reference only. 099045-020 -C 02/00

DECIBEL PRODUCTS
A Division of Allen Telecom Inc.
8635 Stemmons Freeway • P. O. Box 569610 • Dallas, Texas 75356-9610
214 / 631-0310 • Fax: 214 / 631-4706

90°

NATCOMM, LLC

Consulting Engineers

February 19, 2001

Ms. Laura Thoman
Sprint PCS
1 International Boulevard, Suite 300
Mahwah, NJ 07495

Re.: Sprint ~ Site No. CT54XC716
201 South Main Street, Newtown, Connecticut
Natcomm, LLC Project No. 290A

Dear Ms. Thoman:

We have completed a review of the structural assessment and loading conditions for the existing VoiceStream Wireless tower at the above referenced site. The review was performed to determine the adequacy of the 150 ft. self supported monopole tower for carrying additional loads from the proposed Sprint antennas and mounting platform. The analysis is in compliance with local codes and regulations.

The calculations are based on the proposed equipment being installed at 140 ft. above the tower base plate elevation. The dead loads of the proposed equipment, as well as live loads from wind forces and ice build-up on the tower and equipment were considered. Existing and future equipment were considered in the analysis, however, there are no current inventories available for the co-locating carriers to compare against the design parameters.

Review of the structural analysis report completed by PiROD Inc. dated October 17, 2000 has shown that the tower and foundation are adequate to support the proposed equipment loading as indicated in the report. The structural report specifies a total of 12 generic antennas (Model No. EMS RR90-17) at this elevation. The proposed Sprint quantities and models to be installed are six (6) DB980F90E-M and three (3) DB980H90T2E-M. The number of antennas has therefore been reduced from the design value of 12 to a total of 9 at the 140 ft. elevation.

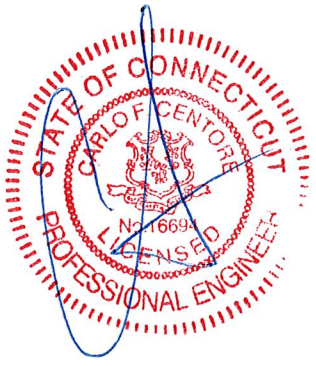
A comparison of the specifications for the various antenna models has shown that the proposed Sprint equipment will impose less wind load on the tower and will ultimately reduce the overturning moment at the base of the structure. This evaluation is based on information provided by the antenna manufacturers. The antenna mounting details shall be as specified in the report.

In conclusion, the existing monopole tower located at 201 South Main Street, Newtown, CT is suitable for installation of the proposed Sprint equipment based on the generic loading conditions described in the structural analysis report. If there are any questions regarding this matter, please feel free to call.

Sincerely,

Walter E. Pierson, P.E.
Project Engineer

c.c. J. Pintek, Natcomm, LLC.
C.F. Centore, Natcomm, LLC.



(203) 488-0580 • Fax (203) 488-8587 • www.natcommllc.com 63-2 North Branford Rd. Branford, CT 06405

PiROD INC.

1545 PIDCO DRIVE
P.O. BOX 128
PLYMOUTH, INDIANA 46563-0128
(219) 936-4221
SALES FAX (219) 936-6796
ENG. FAX (219) 935-4873
ACCOUNTING FAX: (219) 936-4567
PURCHASING FAX: (219) 936-6358

December 14, 1999

Mr. Rick Frazier
Omnipoint
100 Filley Street
Bloomfield, CT 06002

RE: P99-12-104-A, MP54 x 147' Monopole
Newtown, CT

Dear Mr. Frazier:

Thank you for your inquiry concerning tower design codes and practices as they relate to your tower designs in Newtown, Connecticut.

PiROD has been designing and building guyed, self-supporting towers and monopoles since the early 1950's. During this time, we have sold thousands of structures ranging in height from as little as 50' high to in excess of 1400'. These structures were individually engineered to accommodate the loading requirements imparted by the design windspeed, ice considerations, antenna loading, and other factors dictated by the national code requirements existing at the time the tower was built.

The present national tower and monopole code, ANSI/EIA/TIA-222-"F", represents the latest refinement of specific minimum requirements for engineers and manufacturers to follow to help assure that the structure and its foundations are designed to meet the most realistic conditions for local weather while assuring that the structure is designed to stringent factors of safety.

In the case of the monopole under consideration, the owner has elected to exceed the stipulated code requirements for windspeed and has also requested that 1/2" ice be included in the analysis. Ice is considered on all tower members, antennas, and lines and results in a substantially heavier tower design than one considered without ice.

The "F" version of the code incorporates an escalating wind factor based on tower height. "Meeting the code" implies that the design quoted has all of the code requirements for safety factors intact at the windspeed specified. Thus, the ultimate survival speed would be considerably higher. Again, adding ice to the design loading can also add a further safety factor to the final tower strength.

EXHIBIT E TOWER DESIGN STATEMENT

While failure is extremely rare in any kind of tower, it is especially so for monopoles and self-supporting towers. In fact, only if a monopole were subjected to a direct hit from a tornado or the severest of hurricanes would failure be predicted.

We are aware of very few instances of monopole failure. The most common mode of failure would be in the middle region of the monopole, with the upper portion of the monopole remaining connected and "bowing over" against the base of the pole. The fact that the wind is normally greater on the upper portion of the structure contributes to the likelihood of this type of failure. Thus, if a failure condition is reached, it should be reached in the upper middle region of the monopole first.

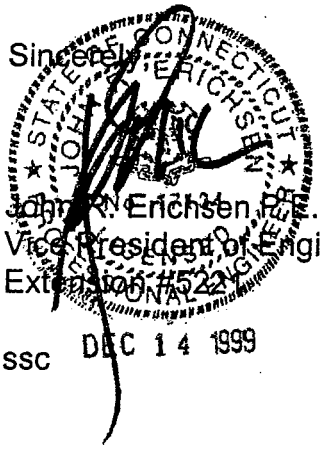
Needless to say, the engineering codes which govern tower and monopole designs are extremely conservative. Monopoles are designed for extreme wind conditions, and even under these extreme conditions, stringent factors of safety are required.

As Vice President of Engineering and a registered P.E. in 41 states, I oversee all engineering and application of our towers. I am a graduate engineer from Notre Dame University and have been with the company since 1984. I am assisted by two registered professional engineers, Mr. Myron Noble, who has been the owner of PiROD, Inc., since 1973 and Mr. William Rettig, who has been with the company since 1990. Four other qualified engineers are also on our staff.

All of PiROD welders are qualified to the high standards of AWS D1.1 or are in the process of becoming qualified. Mathematical and physical tests are performed routinely on structure sections and designs as required. Our total design, engineer and build process has been quality audited by our customers including public utilities, telephone companies and government agencies.

We trust the above and the attached will be helpful to you. If you should need anything else, please let us know at your convenience.

Sincerely,



John R. Erichsen, P.E.
Vice President of Engineering
Extension #522

ssc DEC 14 1999

Power Density Analysis: Newtown

VoiceStream tower on South Main Street

Site # CT54XC716

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 site located at 201 South Main Street in Newtown, CT will collocate on an existing VoiceStream tower. The Sprint PCS transmitting antennas will be located at an antenna centerline of 137' AGL. This site will consist of 3 sectors oriented approximately 120 degrees apart, with a maximum of 11 channels transmitting simultaneously from each sector.

Pursuant to Section 24.52(a) of the former FCC rules, PCS licensees were required to comply with the human exposure levels established by the American National Standards Institute (ANSI). A recent revision of the FCC radio frequency exposure guidelines requires PCS operators to comply with the exposure criteria established by the National Council on Radiation Protection and Measurements (NCRP). The NCRP criteria are more restrictive than the ANSI/IEEE standard. Therefore, the following calculations are made relative to the NCRP criteria. 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 antennas were pointing directly at the ground. In other words, no power-level adjustments were made due to the vertical pattern of the antennas, and the full 379 watts was used for each location (which is a worst-case assumption.) The highest power density is at the base of the tower, which is the closest accessible point to the antennas. **For the antenna centerline of 137ft on existing VoiceStream tower located in Newtown, CT, the power density for the Sprint PCS antennas is 0.079957 mW/cm^2 and the MPE is 7.9957%, which is well below the NCRP standard.**

These calculations show that we are **well** below the FCC-mandated limits in all locations around the tower even with extremely conservative assumptions.

CT54XC716 - Voicestream Tower, 201 South Main Street, Newtown, CT

Cumulative Worst Case Power Density Analysis of Sprint PCS and Voicestream antennas

Operator	Operating Frequency	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Voicestream [a]	1930	150	0.017813	1.00	1.78%
Sprint PCS	1962.5	137	0.079957	1.00	8.00%
Total Percentage of Maximum Permissible Exposure					9.78%

[a] Based on information provided by Voicestream.

CT54XC716 - Voicestream Monopole @ Georgia Pacific Distribution Center, 201 South Main Street, Newtown, CT

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*	%MPE
1962.5	11	378.97	4168.67	137	0	0.079957	1	7.9957%
1962.5	11	378.97	4168.67	137	50	0.070559	1	7.0559%
1962.5	11	378.97	4168.67	137	100	0.052165	1	5.2165%
1962.5	11	378.97	4168.67	137	150	0.036364	1	3.6364%
1962.5	11	378.97	4168.67	137	200	0.025536	1	2.5536%
1962.5	11	378.97	4168.67	137	250	0.018466	1	1.8466%
1962.5	11	378.97	4168.67	137	300	0.013797	1	1.3797%
1962.5	11	378.97	4168.67	137	350	0.010623	1	1.0623%
1962.5	11	378.97	4168.67	137	400	0.008395	1	0.8395%
1962.5	11	378.97	4168.67	137	450	0.006782	1	0.6782%
1962.5	11	378.97	4168.67	137	500	0.005584	1	0.5584%

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

CACACE
TUSCH
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ERIC D. GRAYSON*

LEGAL ASSISTANTS
EVA LEE CHAN
CYNTHIA L. MAMMONE
EVA A. DEVITO

*ALSO ADMITTED IN NEW YORK
+ALSO ADMITTED IN LOUISIANA

March 23, 2001

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

The Honorable Herbert C. Rosenthal
First Selectman
Town of Newtown
45 Main Street
Newtown, Connecticut 06470

Re: Application to the Connecticut Siting Council
Notice of Exempt Modification per R.C.S.A.§16-50j-72(b)(2)
Applicant: Sprint Spectrum, L.P. co-location on VoiceStream monopole
Location: Georgia Pacific Corporation, 201 South Main Street, Newtown

Dear First Selectman Rosenthal:

Sprint Spectrum, L.P. (Sprint) proposes to install PCS antennas and related equipment at the tower facility owned by VoiceStream Wireless (VoiceStream) at 201 South Main Street, Newtown. Sprint has applied to the Connecticut Siting Council for an exempt modification ruling in order to install its PCS facility at the existing VoiceStream facility pursuant to the Regulations of Connecticut State Agencies (R.C.S.A.) §16-50j-72(b)(2). The notice of intent to file an exempt modification application was sent to the Connecticut Siting Council and you on this date in accordance with R.C.S.A. §16-50j-73.

Sprint's proposed tower modification is consistent with the State of Connecticut legislative finding and purpose of avoiding the unnecessary proliferation of towers by using existing structures wherever feasible. VoiceStream received all of the necessary municipal approvals and permits from the Town of Newtown for the construction of its 150' monopole last year. VoiceStream's monopole is designed to support two additional carriers' antennas and Sprint would be the first carrier to co-locate a wireless facility on this tower. VoiceStream leased a 50' by 50' compound from Georgia Pacific Corporation. Sprint's proposed facility will be located entirely within VoiceStream's 50' by 50' compound area as depicted on the site plans.

Enclosed for your review is a copy of the materials Sprint submitted to the Connecticut Siting Council. If you have any questions regarding the Siting Council review and approval process, please call 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/lma
Enclosure

cc: Mortimer A. Gelston, Connecticut Siting Council
Kim Filomia, Sprint Spectrum L.P.
Jean St. Jean, Town of Newtown

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