

THOMAS J. REGAN
ATTORNEY AT LAW

Direct Dial: 860.509.6522
E-Mail: tregan@brfg.com

<http://www.brownrudnick.com>

January 18, 2002

VIA HAND DELIVERY

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

RE: Tower Sharing Proposal

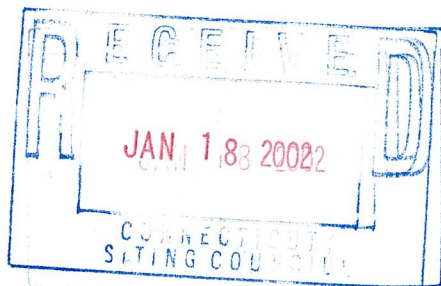
Dear Chairman Gelston:

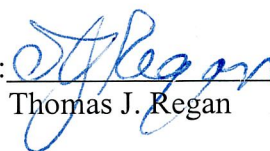
Enclosed please find an original and twenty-five copies of Sprint Spectrum, L.P.'s Tower Sharing Proposal to co-locate on the Farmington Fire Department tower located at 319-321 New Britain Avenue in Farmington, Connecticut. Also enclosed is a check for \$500.00 to cover the filing fee.

The Town Planner for the Town of Farmington was sent a complete copy of this Tower Sharing Proposal.

Very truly yours,

BROWN RUDNICK FREED & GESMER, P.C.



By: 
Thomas J. Regan

TJR/cce
Enclosures
cc: Jeffrey Ollendorf, Town Planner

CONNECTICUT SITING COUNCIL

In re:

Request of Sprint Spectrum, L.P. d/b/a Sprint :
PCS for the Approval of the Shared Use of the :
Proposed Farmington Police Tower Located at :
319-321 New Britain Avenue in Farmington, : January 18, 2002
Connecticut.



TOWER SHARING PROPOSAL

Sprint proposes herein to share a proposed telecommunications tower (the "Tower") and associated compound located at 319-321 New Britain Avenue (the "Farmington Police Station") in Farmington, Connecticut (collectively, the "Facility"). Pursuant to Connecticut General Statutes § 16-50aa (the "Statute"), Sprint requests a finding from the Connecticut Siting Council (the "Council") that the shared use of this Facility is technically, legally, environmentally and economically feasible, will meet public safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. Sprint further requests an order approving the proposed shared use of this Facility.

The purpose of this request is to use an existing facility to meet Sprint's coverage needs in the Farmington area and to avoid the construction of an additional tower in Farmington.

A. Existing Facility

On July 23, 2001, the Farmington Planning & Zoning Commission approved a one hundred ninety foot (190') tower at the Farmington Police Station located at 319-321 New Britain Avenue. The Facility is owned by the Town of Farmington (the "Town") and has not yet been constructed. (Exhibit A – site plan). The proposed Facility will contain a one hundred ninety foot (190') monopole on which the Town will locate many of its public safety antennas.

B. Proposed Project

Sprint proposes the installation of twelve (12) antennas mounted on a triangular platform with four (4) antennas per sector, with the centerline at one hundred seventy feet (170'). Sprint also proposes the installation of a small global positioning system antenna at fifty feet (50') on the southwest side of the Tower. The base station equipment associated with the antennas will be located in a twelve foot by twenty-five-foot (12' x 25') room within the Town's twenty-five foot by ninety foot (25' x 90') compound area which is located at the base of the Tower. (Exhibit A – site plan).

AT&T and Voicestream have both stated their intention to co-locate on this Facility. At this time, however, neither has signed a lease with the Town.

C. Technical Feasibility

Consistent with the requirements of the Statute, it is technically feasible for Sprint to co-locate on this Tower. The existing monopole was designed and constructed to support four (4) carriers. Sprint will be the first carrier located on the Tower. The structural capability of the Tower is described in a monopole specification report by URS Corporation AES, dated December 4, 2001, provided as Exhibit B.

D. Legal / Economic Feasibility

Sprint has entered into a lease with the Town of Farmington for the purpose of locating Sprint's antennas and associated equipment at the Facility. The Council has the authority, pursuant to the Statute, to issue orders approving the shared use of the Facility. Therefore, consistent with the Statute, the proposal is both economically and legally feasible.

E. Environmental Feasibility

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the Town of Farmington will be decreased with the sharing of a single tower versus the proliferation of many towers.
- The proposal will not increase the height of the Tower or the size of the compound.

- The proposal will have an insignificant visual impact with the addition of four (4) panel antennas per sector.
- There will be no increased impact on any wetlands or water resources.
- There will be no increased impact on air quality because no air pollutants will be generated during the normal operation of the Facility.
- There will only be a brief, slight increase in noise pollution during the attachment of the antennas.
- During construction, the proposed project will generate a small amount of traffic as workers arrive and depart and materials are delivered. Upon completion, traffic will be limited to an average of one (1) monthly maintenance and inspection visit.
- The total frequency electromagnetic radiation of the power density measured at the site will not be at or above the standard adopted by the Federal Communications Commission (the "FCC"). Attached as Exhibit C is a worst case power density analysis for the operation of Sprint PCS's antennas at the Facility as measured at the base of the Tower and a cumulative analysis for the Facility with Sprint's, Voicestream's, AT&T's and the Town's antennas in place. The cumulative power density is 22.75% of the maximum permissible exposure based on the NCRP standard. These calculations show that the Facility will be well below the FCC mandated limits in all locations around the existing Tower, even with extremely conservative assumptions.

F. Public Safety Concerns / Benefits

In accordance with the Statute, there are no known public safety concerns associated with this proposal. Moreover, Sprint will be enhancing the communication needs of the citizens of the community. This Facility will cover an approximate four (4) mile coverage gap along Route 4 beginning at Brickyard Road and continuing down Route 4 to the Farmington/Burlington border. The Facility will also cover a two (2) mile coverage gap along Route 177 between Route 4 and Copper Mine Road. Therefore, not only will this Facility will be an essential part of Sprint's telecommunications network throughout Connecticut, it will facilitate wireless communications for emergency services, businesses and residents in and around this area of Farmington.

Conclusion

For the reasons stated above, the attachment of Sprint's antennas to this Tower would meet all the requirements set forth in the Statute. This proposal is technically, legally, environmentally and economically feasible and meets all public safety concerns. Therefore, Sprint respectfully requests that the Council approve this request for the shared use of the

existing telecommunications facility located at the Farmington Police Station at 319-321 New Britain Avenue in Farmington, Connecticut.

Sprint Spectrum, L.P.
d/b/a Sprint PCS

By: 
Thomas J. Regan, Esq.
Brown, Rudnick, Freed & Gesmer, P.C.
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Phone - (860) 509-6522
Fax - (860) 509-6501

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CT33XC534 - Farmington Police Tower
Cumulative Worst Case Power Density Analysis of Sprint PCS, Voicestream,
AT&T, and Town of Farmington antennas

Operator	Operating Frequency	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)	(feet)	(mW/cm ²)	(mW/cm ²)	(%)
Sprint PCS	1962.5	170	0.051751	1.00	5.18%
Voicestream^a	1930	160	0.027073	1.00	2.71%
AT&T^b	1967.5	150	0.012800	1.00	1.28%
Town of Farmington Facilities^c	Details see attached calculation sheet.				14.87%

Total Percentage of Maximum Permissible Exposure

22.75%

^a Based on information provided by Voicestream.

^b Calculations based on information provided by AT&T.

^c Calculations based on information provided by Town of Farmington.

**Sprint PCS @ Farmington Police Tower
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 Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm2)	Maximum Permissible Exposure*	%MPE
1962.5	11	377.68	4154.48	170	0	0.051751	1	5.1751%
1962.5	11	377.68	4154.48	170	50	0.047631	1	4.7631%
1962.5	11	377.68	4154.48	170	100	0.038448	1	3.8448%
1962.5	11	377.68	4154.48	170	150	0.029098	1	2.9098%
1962.5	11	377.68	4154.48	170	200	0.021707	1	2.1707%
1962.5	11	377.68	4154.48	170	250	0.016363	1	1.6363%
1962.5	11	377.68	4154.48	170	300	0.012579	1	1.2579%
1962.5	11	377.68	4154.48	170	350	0.009879	1	0.9879%
1962.5	11	377.68	4154.48	170	400	0.007917	1	0.7917%
1962.5	11	377.68	4154.48	170	450	0.006463	1	0.6463%
1962.5	11	377.68	4154.48	170	500	0.005363	1	0.5363%

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

**AT&T @ Farmington Police Tower
Worst Case Power Density Analysis of AT&T Antennas @ Base of Tower. Assumes Max ERP & No Antenna Pattern Adjustment**

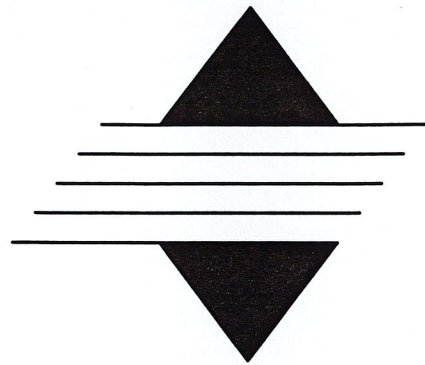
Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm2)	Maximum Permissible Exposure*	%MPE
1965 - 1970	8	100	800	150	0	0.012800	1	1.2800%
1966 - 1970	8	100	800	150	50	0.011520	1	1.1520%
1967 - 1970	8	100	800	150	100	0.008862	1	0.8862%
1968 - 1970	8	100	800	150	150	0.006400	1	0.6400%
1969 - 1970	8	100	800	150	200	0.004608	1	0.4608%
1970 - 1970	8	100	800	150	250	0.003388	1	0.3388%
1971 - 1970	8	100	800	150	300	0.002560	1	0.2560%
1972 - 1970	8	100	800	150	350	0.001986	1	0.1986%
1973 - 1970	8	100	800	150	400	0.001578	1	0.1578%
1974 - 1970	8	100	800	150	450	0.001280	1	0.1280%
1975 - 1970	8	100	800	150	500	0.001057	1	0.1057%

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

**Various Town of Farmington Facilities @ Farmington Police Tower
Worst Case Power Density Analysis of Town Antennas @ Base of Tower. Assumes Max ERP & No Antenna Pattern Adjustment**

Facility Name	Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm2)	Maximum Permissible Exposure (mW/cm2)	%MPE
960 Link to Ch 61, Parabolic (Grid)	955.35	1	5	5	180	0	0.000056	0.63690	0.0087%
960 Link to Water Tank, Parabolic	900	1	5	5	190	0	0.000050	0.60000	0.0083%
Main Backup, Omni 7.5dB	855.2375	1	350	350	190	0	0.003490	0.57016	0.6122%
Detective	866.775	1	350	350	190	0	0.003490	0.57785	0.6040%
Future Trunked	866.35	1	179	179	190	0	0.001785	0.57757	0.3091%
Future Trunked	867.9375	1	179	179	190	0	0.001785	0.57863	0.3085%
Future Trunked	869.6625	1	179	179	190	0	0.001785	0.57978	0.3079%
RAFS, Yagi	851.1625	1	15	15	185	0	0.000158	0.56744	0.0278%
RAFS	852.9125	1	15	15	185	0	0.000158	0.56861	0.0277%
ITAC, Yagi	821.0125	1	15	15	185	0	0.000158	0.54734	0.0288%
ITAC	821.5125	1	15	15	185	0	0.000158	0.54768	0.0288%
ITAC	823.0125	1	15	15	185	0	0.000158	0.54868	0.0288%
Farmington FD, Omni 5.5dB	154.19	1	100	100	180	0	0.001111	0.20000	0.5556%
Inter City, Omni	154.265	1	30	30	113	0	0.000846	0.20000	0.4229%
Area 5 Emergency	153.74	1	30	30	113	0	0.000846	0.20000	0.4229%
Area 3 Emergency	153.935	1	30	30	113	0	0.000846	0.20000	0.4229%
Fire Ground	155.34	1	30	30	113	0	0.000846	0.20000	0.4229%
AMR Ambulance, Omni	155.235	1	35	35	113	0	0.000987	0.20000	0.4934%
Burlington FD, Omni	154.01	1	35	35	113	0	0.000987	0.20000	0.4934%
Hartford County Fire, Omni	33.94	1	110	110	90	0	0.004889	0.20000	2.4444%
Mutual Aid	33.5	1	110	110	90	0	0.004889	0.20000	2.4444%
Disaster Coordination, Omni	33.04	1	100	100	90	0	0.004444	0.20000	2.2222%
Public Works	46.52	1	50	50	90	0	0.002222	0.20000	1.1111%
Public Works	46.58	1	50	50	90	0	0.002222	0.20000	1.1111%
Total % MPE of Town Facilities									14.8679%

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



Sprint PCS

SITE I.D.# CT33XC534 TOWN OF FARMINGTON POLICE DEPARTMENT TOWER NEW BRITAIN AVE. FARMINGTON, CONNECTICUT

GENERAL NOTES

1. ADA COMPLIANCE: FACILITY IS UNMANNED AND NOT NORMALLY OCCUPIED.
2. FOR ADDITIONAL NOTES AND DETAILS, SEE ACCOMPANYING DRAWINGS.

PROJECT DESCRIPTION

PROPOSED INSTALLATION OF A WIRELESS TELECOMMUNICATIONS FACILITY ON AN EXISTING 190' MONOPOLE AND GROUND MOUNTED EQUIPMENT.

LEGAL DESCRIPTION

SITE NAME: TOWN OF FARMINGTON
POLICE DEPARTMENT TOWER
ASSESSOR'S PARCEL NO.: LOT-1-13 BLOCK-19
PROPERTY OWNER: TOWN OF FARMINGTON

PROJECT INFORMATION

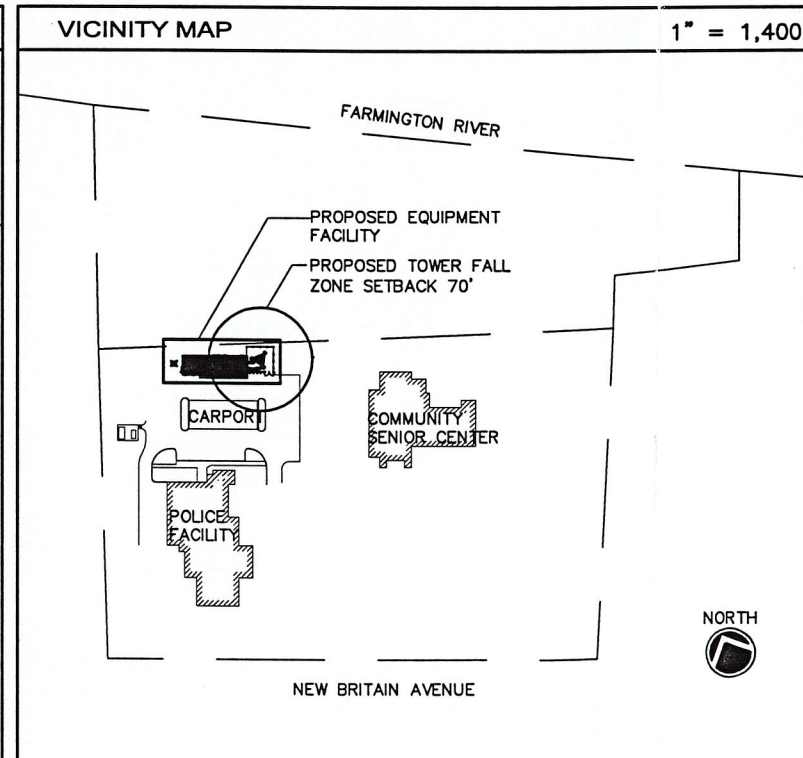
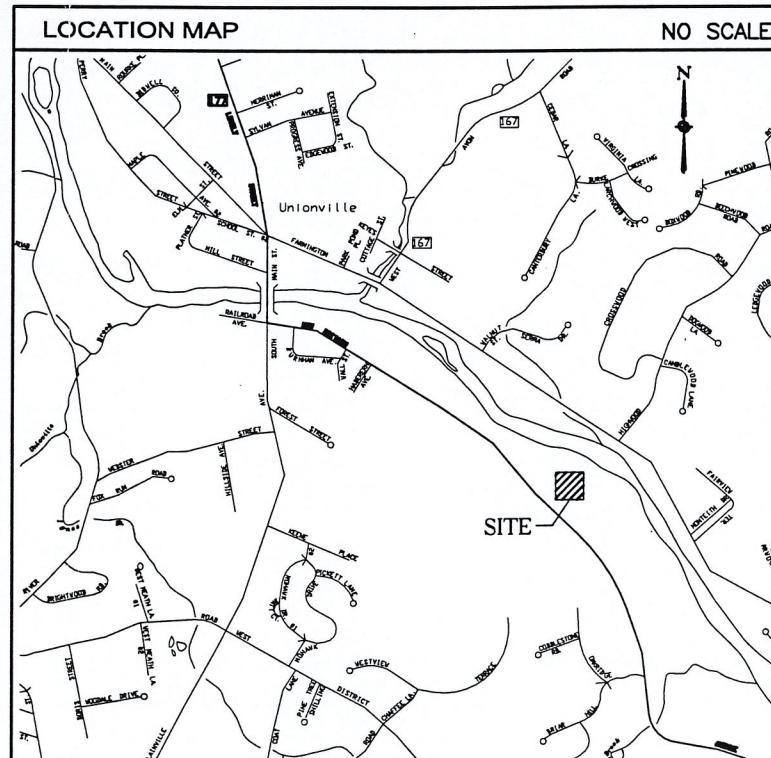
SITE ADDRESS: NEW BRITAIN AVE
FARMINGTON, CONNECTICUT
ZONING CLASSIFICATION: R-30/CR ZONE

PROJECT DIRECTORY

APPLICANT: SPRINT SPECTRUM LP, dba SPRINT PCS
1 INTERNATIONAL BLVD.
MAHWAH, NJ 07495
ENGINEER: URS CORPORATION AES
795 BROOK STREET, BUILDING 5
ROCKY HILL, CT 06067
(860) 529-8882

SHEET INDEX

T-1	TITLE SHEET
SC-1	SITE PLAN AND TOWER ELEVATION



DRIVING DIRECTIONS

- TAKE I-84 WEST TO EXIT 39, (RT 4).
- TAKE RT 4 WEST INTO UNIONVILLE.
- TAKE A LEFT ONTO RT 177 SOUTH.
- TAKE A LEFT ONTO NEW BRITAIN AVENUE.
- SITE IS NEXT TO KNIGHTS OF COLUMBUS.

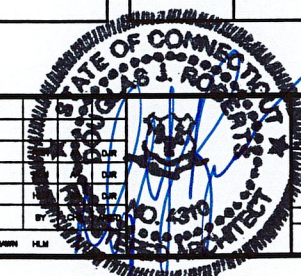
URS CORPORATION AES
795 BROOK STREET, BUILDING 5
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

FARMINGTON POLICE DEPARTMENT TOWER
NEW BRITAIN AVE
FARMINGTON, CONNECTICUT
SITE I.D.# CT33XC534



Sprint PCS
HARTFORD MTA

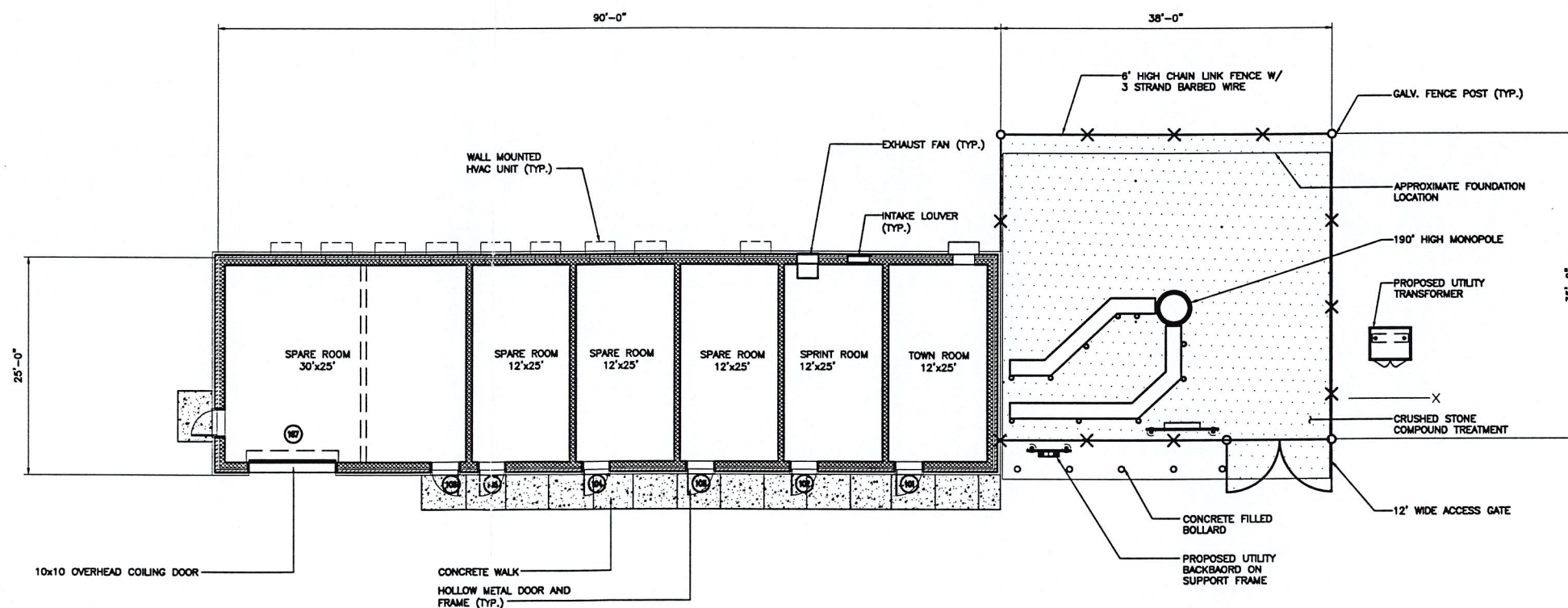
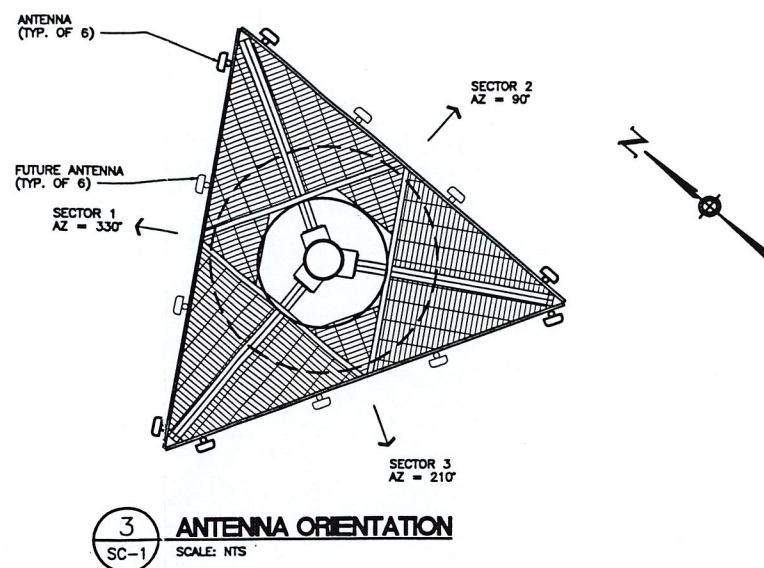
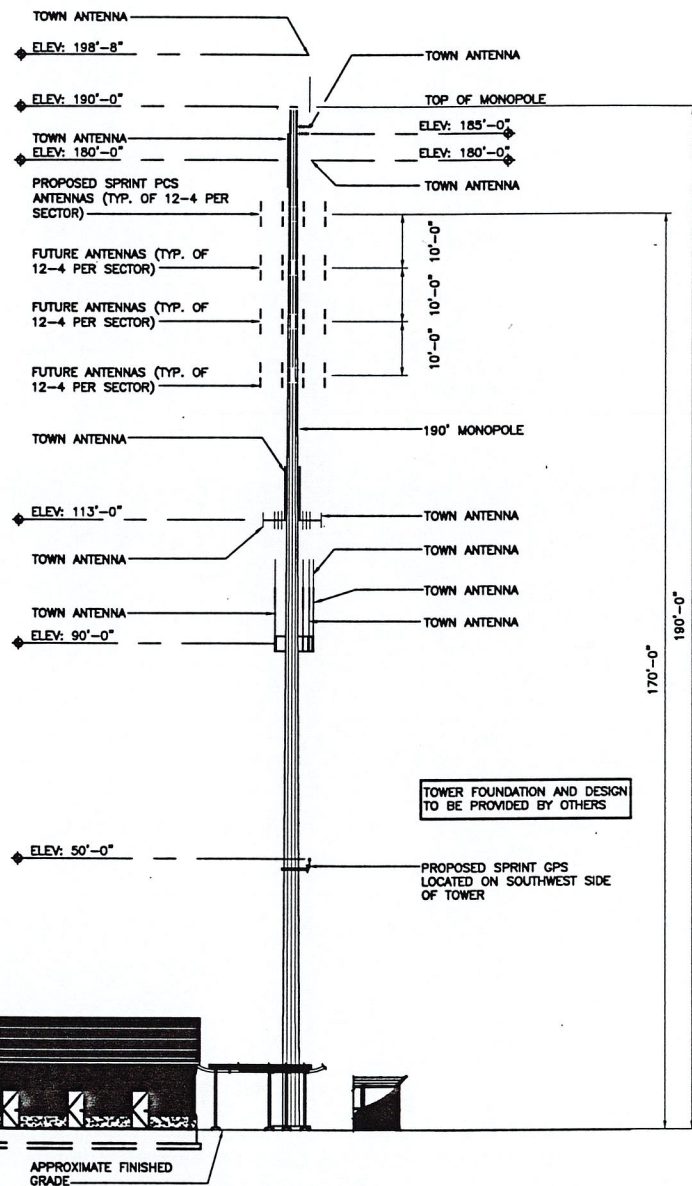
NO.	DATE	REVISIONS
11-18-01		RE-ISSUED FOR SITING COUNCIL APPROVAL
11-14-01		ISSUED FOR SITING COUNCIL APPROVAL
10-28-01		ISSUED FOR REVIEW
NO.	DATE	REVISIONS
SCALE:	AS NOTED	DESIGNED: DJR
		DRAWN: HLM



Sprint PCS

TITLE SHEET

JOB NO. F301972.52/F03
DRAWING NUMBER T-1
REV 2



URS CORPORATION AES
 795 BROOK STREET, BUILDING 5
 ROCKY HILL, CONNECTICUT
 1-(860)-529-8882

FARMINGTON POLICE DEPARTMENT TOWER
 NEW BRITAIN AVE
 FARMINGTON, CONNECTICUT
 SITE I.D.# CT33XC534

Sprint PCS
 HARTFORD MTA

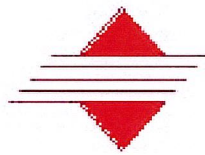
NO.	DATE	REVISIONS
11-19-01		RE-ISSUED FOR SITING COUNCIL APPROVAL
11-14-01		ISSUED FOR SITING COUNCIL APPROVAL
10-28-01		ISSUED FOR REVIEW
NO.	DATE	REVISIONS
SCALE:	AS NOTED	DESIGNED: DJR
		DRAWN: HLM

Sprint PCS
 SITE PLAN AND TOWER ELEVATION
 JOB NO. F301972.52/F03
 DRAWING NUMBER SC-1
 REV 2

INDEPENDENT STRUCTURAL ANALYSIS and EVALUATION of 190' MONOPOLE STRUCTURE

Farmington Police Department
New Britain Avenue
Farmington, Connecticut
Sprint Site No.: CT33XC534

prepared for



Sprint

**SPRINT PCS
1 INTERNATIONAL DRIVE
MAHWAH, NJ 07494
TEL. 201-684-4060**



URS

Prepared by

**URS CORPORATION AES
795 BROOK STREET, BUILDING 5
ROCKY HILL, CT 06067
TEL 860-529-8882**

F300001972.52 / F12

December 4, 2001



December 4, 2001

Mr. Mark St. Pierre
Building Official
Town of Farmington
One Monteith Drive
Farmington, Connecticut 06032

Reference: Proposed Telecommunications Facility
Sprint Site No.: CT33XC534
Farmington Police Department
New Britain Avenue
Farmington, Connecticut
F300001972.52

Dear Mr. St. Pierre:

URS Corporation has been authorized by Sprint PCS to perform an independent structural analysis and evaluation of the above referenced 190' monopole structure and foundation designs for the above referenced site. We have performed the analysis and reviewed the tower structure and foundation design documents prepared by Pirod Inc., Engineering File A-118703 approved November 7, 2001. The monopole is to be manufactured by Pirod Inc., Drawing No. 157375-B approved November 7, 2001.

This analysis was conducted as stipulated in Section 114.3 of the Connecticut State Building Code and Section 29-276b of the Connecticut General Statute for independent structural analysis and evaluation.

Our analysis determined that the design documents comply with the requirements of the TIA/EIA-222-F dated March 1996 and the Connecticut State Building Code dated 1999 and the latest Supplements and Amendments.

Should you have any questions, please contact us.

Sincerely,

URS Corporation AES

Mohsen Sahirad, P.E.
Senior Structural Engineer



Enclosures

MS/mks

cc: Steve Orkoulas– Sprint PCS
Jeff York– Site Link
Alitz Abadjian – URS

bcc: I.A. – URS
D.R. – URS
CF/Book

Size	Weight (K)	34.5	TP62 938x53.563x0.375	8.8	TP56 125x46.75x0.375	7.9	TP49 063x39.688x0.375	6.8	TP41 75x32.375x0.375	5.7	TP34 063x24.688x0.313	3.8	TP26x19.563x0.25	1.6
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190.1 ft

167.3 ft

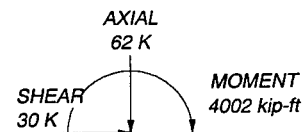
133.6 ft

100.8 ft

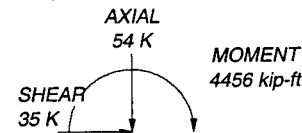
68.8 ft

37.5 ft

0.0 ft



74 mph WIND - 0.500 in ICE



REACTIONS - 85 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) TDF7220	190	Low profile platform	160
23-ARM CLAMP-ON (5')	190	(12) DAPA 48000	160
N-PIPE 2"x50"	190	Low profile platform	150
4' Grid Dish	190	(12) DAPA 48000	150
(2) Yagi	185	(12) DAPA 48000	140
23-ARM CLAMP-ON (2')	185	Low profile platform	140
N-PIPE 2"x50"	185	23-ARM CLAMP-ON (5')	113
TDD7260	180	N-PIPE 2"x50"	113
23-ARM CLAMP-ON (5')	180	(3) TDD7260	113
N-PIPE 2"x50"	180	N-PIPE 2"x50"	90
4' Grid Dish	180	23-ARM CLAMP-ON (5')	90
(12) DAPA 48000	170	(3) TDB6400	90
Low profile platform	170		

TOWER DESIGN NOTES

1. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F S
2. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
3. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222-F and AISC Specifications.
4. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
5. Welds are fabricated with ER-70S-6 electrodes.

URS CORPORATION

795 Brook Street, Building 5
Rocky Hill, Connecticut 06067
Phone: (860) 529-8882
FAX: (860) 529-5566

Job: **Farmington Police Department**

Project: **F300001972.52 /F12**

Client: **Sprint PCS** Drawn by: **Robert M. Niemiec** App'd:

Code: **TIA/EIA-222-F** Date: **12/04/01** Scale: **NTS**

Path: **P:\Telecom\F12\Farmington2sh.eri** Dwg No. **E-**

URS Corporation

Job Description 190' Monopole

Connecticut Town of Farmington
wind velocity mph

V=

85 use mph →

Computed by R Niemiec
Checked by

Date 04-Dec-01
Reference

Antenna and Platform Type and Model	Telecom CO.	Z Height above ground ft	Dead of each antenna with no ice	Projected area net Aa ft²	Projected area net w/ ice ft²	Length L	Width W	is member flat y or n	CA	Wind Speed mph	Kz	is member tubular N or Y	Gh	Qz	Thrust Fx no ice lb	Thrust Fx with ice lb	Dead Load Antenna no ice	Dead Load Antenna with ice	Total	Aa no ice ft²	Aa w/ ice ft²	CAa no ice ft²	CAa w/ ice ft²
DAPA 4800		170.00	18.30	38.64	43.08	53.30	8.70	Y	1.40	85.00	1.60	Y	1.69	29.55	2702.00	3012.00	219.60	264.00	219.60	38.64	43.08	45.08	50.26
DAPA 4800		160.00	18.30	38.64	43.08	53.30	8.70	Y	1.40	85.00	1.57	Y	1.69	29.04	2655.00	2981.00	219.60	264.00	219.60	38.64	43.08	45.08	50.26
DAPA 4800		150.00	18.30	38.64	43.08	53.30	8.70	Y	1.40	85.00	1.54	Y	1.69	28.51	2607.00	2906.00	219.60	264.00	219.60	38.64	43.08	45.08	50.26
DAPA 4800		140.00	18.30	38.64	43.08	53.30	8.70	Y	1.40	85.00	1.51	Y	1.69	27.95	2556.00	2850.00	219.60	264.00	219.60	38.64	43.08	45.08	50.26

Job	Farmington Police Department	Page	1 of 17
Project	F300001972.52 /F12	Date	08:44:47 12/04/01
Client	Sprint PCS	Designed by	Robert M. Niemiec

Stress ratio used in pole design is 1.333 .

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	K Factors ¹								
						Legs	X	K	Single	Girts	Horiz.	Inner	Truss	Truss
							Brace	Brace	Diags			Brace	Leg	Leg
							Diags	Diags					X	Z
							X	X	X	X		Brace	Brace	
ft	ft ²	in					Y	Y	Y	Y	Y			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	K Factors ¹								
						Legs	X	K	Single	Girts	Horiz.	Inner	Truss	Truss
							Brace	Brace	Diags			Brace	Leg	Leg
							Diags	Diags				X	X	Z
						X	X	X	X	X	Brace	Brace		
ft	ft ²	in				Y	Y	Y	Y	Y	Y			
L1 190.08- 167.25	0.000	0.000	1	1	1	1								û_ÓZ°
L2 167.25- 133.58	0.000	0.000	1	1	1	1								û_ÓZ°
L3 133.58- 100.75	0.000	0.000	1	1	1	1								û_ÓZ°
L4 100.75- 68.75	0.000	0.000	1	1	1	1								û_ÓZ°
L5 68.75-37.5	0.000	0.000	1	1	1	1								û_ÓZ°
L6 37.5-0	0.000	0.000	1	1	1	1								û_ÓZ°

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Feed Line/Linear Appurtenances - Non-Structural

Description	Face	Component Type	Placement	Total Number		C _{AA} A _A	Weight
			ft			ft ² /ft	klf
1 5/8	C	CaAa (Out Of Face)	170.000 - 0.000	12	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
1 5/8	C	CaAa (Out Of Face)	160.000 - 0.000	12	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
1 5/8	C	CaAa (Out Of Face)	150.000 - 0.000	12	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
1 5/8	C	CaAa (Out Of Face)	140.000 - 0.000	12	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
7/8	C	CaAa (Out Of Face)	190.000 - 0.000	3	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
1/2	C	CaAa (Out Of Face)	185.000 - 0.000	2	No Ice	0.000	0.000
					1/2" Ice	0.000	0.000
					1" Ice	0.000	0.000
					2" Ice	0.000	0.000
					4" Ice	0.000	0.000
7/8	C	CaAa (Out Of Face)	180.000 - 0.000	2	No Ice	0.000	0.001
					1/2" Ice	0.000	0.001
					1" Ice	0.000	0.001
					2" Ice	0.000	0.001
					4" Ice	0.000	0.001
1/2	C	CaAa (Out Of Face)	113.000 - 0.000	3	No Ice	0.000	0.000

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Description	Face	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
					1/2" Ice	0.000	0.000
					1" Ice	0.000	0.000
					2" Ice	0.000	0.000
					4" Ice	0.000	0.000
1/2	C	CaAa (Out Of Face)	90.000 - 0.000	3	No Ice	0.000	0.000
					1/2" Ice	0.000	0.000
					1" Ice	0.000	0.000
					2" Ice	0.000	0.000
					4" Ice	0.000	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	190.08-167.25		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.094
L2	167.25-133.58		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	1.143
L3	133.58-100.75		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	1.753
L4	100.75-68.75		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	1.740
L5	68.75-37.5		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	1.707
L6	37.5-0		0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000	2.048

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	190.08-167.25		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.094
L2	167.25-133.58		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	1.143
L3	133.58-100.75		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	1.753
L4	100.75-68.75		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	1.740
L5	68.75-37.5		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	1.707

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Tower Section	Tower Elevation ft	Face	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L6	37.5-0		0.500	0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	0.000
				0.000	0.000	0.000	0.000	2.048

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment deg	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(12) DAPA 48000	A	None		0.000	170.000	No Ice	45.080	45.080	0.220
						1/2" Ice	50.260	50.260	0.264
						1" Ice	55.440	55.440	0.308
						2" Ice	65.800	65.800	0.396
						4" Ice	86.520	86.520	0.572
(12) DAPA 48000	A	None		0.000	160.000	No Ice	45.080	45.080	0.220
						1/2" Ice	50.260	50.260	0.264
						1" Ice	55.440	55.440	0.308
						2" Ice	65.800	65.800	0.396
						4" Ice	86.520	86.520	0.572
(12) DAPA 48000	A	None		0.000	150.000	No Ice	45.080	45.080	0.220
						1/2" Ice	50.260	50.260	0.264
						1" Ice	55.440	55.440	0.308
						2" Ice	65.800	65.800	0.396
						4" Ice	86.520	86.520	0.572
(12) DAPA 48000	A	None		0.000	140.000	No Ice	45.080	45.080	0.220
						1/2" Ice	50.260	50.260	0.264
						1" Ice	55.440	55.440	0.308
						2" Ice	65.800	65.800	0.396
						4" Ice	86.520	86.520	0.572
(2) TDF7220	A	None		0.000	190.000	No Ice	6.000	6.000	0.050
						1/2" Ice	8.000	8.000	0.092
						1" Ice	10.000	10.000	0.134
						2" Ice	14.000	14.000	0.218
						4" Ice	22.000	22.000	0.386
(2) Yagi	A	None		0.000	185.000	No Ice	12.600	12.600	0.100
						1/2" Ice	12.600	12.600	0.100
						1" Ice	0.000	0.000	0.000
						2" Ice	0.000	0.000	0.000
						4" Ice	0.000	0.000	0.000
TDD7260	A	None		0.000	180.000	No Ice	3.600	3.600	0.030
						1/2" Ice	4.800	4.800	0.056
						1" Ice	6.000	6.000	0.082
						2" Ice	8.400	8.400	0.134
						4" Ice	13.200	13.200	0.238
2&3-ARM CLAMP-ON (5')	A	None		0.000	190.000	No Ice	10.770	10.770	0.863
						1/2" Ice	11.790	11.790	0.979
						1" Ice	12.810	12.810	1.095
						2" Ice	14.850	14.850	1.327
						4" Ice	18.930	18.930	1.791
N-PIPE 2"x50"	A	None		0.000	190.000	No Ice	1.830	1.830	0.030
						1/2" Ice	2.280	2.280	0.046
						1" Ice	2.730	2.730	0.062

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment deg	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
2&3-ARM CLAMP-ON (2')	A	None	0.000	185.000	2" Ice		3.630	3.630	0.094
					4" Ice		5.430	5.430	0.158
					No Ice		7.320	7.320	0.644
					1/2" Ice		7.970	7.970	0.713
					1" Ice		8.620	8.620	0.782
					2" Ice		9.920	9.920	0.920
N-PIPE 2"x50"	A	None	0.000	185.000	4" Ice		12.520	12.520	1.196
					No Ice		1.830	1.830	0.030
					1/2" Ice		2.280	2.280	0.046
					1" Ice		2.730	2.730	0.062
					2" Ice		3.630	3.630	0.094
					4" Ice		5.430	5.430	0.158
2&3-ARM CLAMP-ON (5')	A	None	0.000	180.000	No Ice		10.770	10.770	0.863
					1/2" Ice		11.790	11.790	0.979
					1" Ice		12.810	12.810	1.095
					2" Ice		14.850	14.850	1.327
					4" Ice		18.930	18.930	1.791
					No Ice		0.920	0.920	0.015
N-PIPE 2"x50"	A	None	0.000	180.000	1/2" Ice		1.140	1.140	0.023
					1" Ice		1.360	1.360	0.031
					2" Ice		1.800	1.800	0.047
					4" Ice		2.680	2.680	0.079
					No Ice		17.300	17.300	1.500
					1/2" Ice		22.100	22.100	2.030
Low profile platform	A	None	0.000	170.000	1" Ice		26.900	26.900	2.560
					2" Ice		36.100	36.500	3.620
					4" Ice		54.900	55.700	5.740
					No Ice		17.300	17.300	1.500
					1/2" Ice		22.100	22.100	2.030
					1" Ice		26.900	26.900	2.560
Low profile platform	A	None	0.000	160.000	2" Ice		36.100	36.500	3.620
					4" Ice		54.900	55.700	5.740
					No Ice		17.300	17.300	1.500
					1/2" Ice		22.100	22.100	2.030
					1" Ice		26.900	26.900	2.560
					2" Ice		36.100	36.500	3.620
Low profile platform	A	None	0.000	150.000	4" Ice		54.900	55.700	5.740
					No Ice		17.300	17.300	1.500
					1/2" Ice		22.100	22.100	2.030
					1" Ice		26.900	26.900	2.560
					2" Ice		36.100	36.500	3.620
					4" Ice		54.900	55.700	5.740
Low profile platform	A	None	0.000	140.000	No Ice		17.300	17.300	1.500
					1/2" Ice		22.100	22.100	2.030
					1" Ice		26.900	26.900	2.560
					2" Ice		36.100	36.500	3.620
					4" Ice		54.900	55.700	5.740
					No Ice		17.300	17.300	1.500
(3) TDD7260	A	None	0.000	113.000	1/2" Ice		22.100	22.100	2.030
					1" Ice		26.900	26.900	2.560
					2" Ice		36.100	36.500	3.620
					4" Ice		54.900	55.700	5.740
					No Ice		9.000	9.000	0.075
					1/2" Ice		12.000	12.000	0.138
(3) TDB6400	A	None	0.000	90.000	1" Ice		15.000	15.000	0.201
					2" Ice		21.000	21.000	0.327
					4" Ice		33.000	33.000	0.579
					No Ice		16.200	16.200	0.135
					1/2" Ice		21.600	21.600	0.249
					1" Ice		27.000	27.000	0.363
2&3-ARM CLAMP-ON (5')	A	None	0.000	113.000	2" Ice		37.800	37.800	0.591
					4" Ice		59.400	59.400	1.047
					No Ice		10.770	10.770	0.863
					1/2" Ice		11.790	11.790	0.979
					1" Ice		12.810	12.810	1.095
					2" Ice		14.850	14.850	1.327
					4" Ice		18.930	18.930	1.791

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment deg	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
N-PIPE 2"x50"	A	None		0.000	113.000	No Ice	2.750	2.750	0.045
						1/2" Ice	3.420	3.420	0.069
						1" Ice	4.090	4.090	0.093
						2" Ice	5.430	5.430	0.141
						4" Ice	8.110	8.110	0.237
2&3-ARM CLAMP-ON (5')	A	None		0.000	90.000	No Ice	10.770	10.770	0.135
						1/2" Ice	11.790	11.790	0.249
						1" Ice	12.810	12.810	0.363
						2" Ice	14.850	14.850	0.591
						4" Ice	18.930	18.930	1.047
N-PIPE 2"x50"	A	None		0.000	90.000	No Ice	2.750	2.750	0.045
						1/2" Ice	3.420	3.420	0.069
						1" Ice	4.090	4.090	0.093
						2" Ice	5.430	5.430	0.141
						4" Ice	8.110	8.110	0.237

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offset Distance ft	Azimuth Adjustment deg	Elevation ft	Outside Diameter ft		Aperture Area ft ²	Weight K
4' Grid Dish		Grid	None		Worst	190.000	4.000	No Ice	12.566	0.087
								1/2" Ice	13.095	0.130
								1" Ice	13.624	0.173
								2" Ice	14.683	0.259
								4" Ice	16.799	0.431
4' Grid Dish		Grid	None		Worst	180.000	4.000	No Ice	12.566	0.087
								1/2" Ice	13.095	0.130
								1" Ice	13.624	0.173
								2" Ice	14.683	0.259
								4" Ice	16.799	0.431

Tower Pressures - No Ice

$$G_H = 1.690$$

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
L1 190.08- 167.25	178.12739 43	1.619	0.030	43.341	A	0.000	43.341	43.341	100.00	0.000	0.000
					B	0.000	43.341		100.00		
					C	0.000	43.341		100.00		
L2 167.25- 133.58	149.51952 2	1.54	0.028	82.421	A	0.000	82.421	82.421	100.00	0.000	0.000
					B	0.000	82.421		100.00		
					C	0.000	82.421		100.00		

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Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		ksf	ft ²		ft ²	ft ²	ft ²			
L3 133.58- 100.75	116.47296 85	1.434	0.027	101.397	A B C	0.000 0.000 0.000	101.397 101.397 101.397	101.397	100.00 100.00 100.00	0.000	0.000
L4 100.75- 68.75	84.186620 2	1.307	0.024	118.333	A B C	0.000 0.000 0.000	118.333 118.333 118.333	118.333	100.00 100.00 100.00	0.000	0.000
L5 68.75-37.5	52.650364 9	1.143	0.021	133.952	A B C	0.000 0.000 0.000	133.952 133.952 133.952	133.952	100.00 100.00 100.00	0.000	0.000
L6 37.5-0	18.247049 7	1	0.018	182.031	A B C	0.000 0.000 0.000	182.031 182.031 182.031	182.031	100.00 100.00 100.00	0.000	0.000

Tower Pressure - With Ice

$$G_H = 1.690$$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		ksf	ft ²		ft ²	ft ²	ft ²			
L1 190.08- 167.25	178.12739 43	1.619	0.023	45.244	A B C	0.000 0.000 0.000	45.244 45.244 45.244	45.244	100.00 100.00 100.00	0.000	0.000
L2 167.25- 133.58	149.51952 2	1.54	0.022	85.227	A B C	0.000 0.000 0.000	85.227 85.227 85.227	85.227	100.00 100.00 100.00	0.000	0.000
L3 133.58- 100.75	116.47296 85	1.434	0.020	104.133	A B C	0.000 0.000 0.000	104.133 104.133 104.133	104.133	100.00 100.00 100.00	0.000	0.000
L4 100.75- 68.75	84.186620 2	1.307	0.018	121.000	A B C	0.000 0.000 0.000	121.000 121.000 121.000	121.000	100.00 100.00 100.00	0.000	0.000
L5 68.75-37.5	52.650364 9	1.143	0.016	136.556	A B C	0.000 0.000 0.000	136.556 136.556 136.556	136.556	100.00 100.00 100.00	0.000	0.000
L6 37.5-0	18.247049 7	1	0.014	185.156	A B C	0.000 0.000 0.000	185.156 185.156 185.156	185.156	100.00 100.00 100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal (180)

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08- 167.25	0.094	1.597	A B C	1 1 1	0.65 0.65 0.65	1 1 1	1 1 1	1 1 1	43.341 43.341 43.341	1.426	0.062	C
L2 167.25- 133.58	1.143	3.751	A B C	1 1 1	0.65 0.65 0.65	1 1 1	1 1 1	1 1 1	82.421 82.421 82.421	2.579	0.077	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L3 133.58- 100.75	1.753	5.680	A	1	0.65	1	1	1	101.397	2.954	0.090	C
			B	1	0.65	1	1	1	101.397			
			C	1	0.65	1	1	1	101.397			
L4 100.75- 68.75	1.740	6.811	A	1	0.65	1	1	1	118.333	3.142	0.098	C
			B	1	0.65	1	1	1	118.333			
			C	1	0.65	1	1	1	118.333			
L5 68.75-37.5	1.707	7.903	A	1	0.65	1	1	1	133.952	3.110	0.100	C
			B	1	0.65	1	1	1	133.952			
			C	1	0.65	1	1	1	133.952			
L6 37.5-0	2.048	8.794	A	1	0.65	1	1	1	182.031	3.698	0.099	C
			B	1	0.65	1	1	1	182.031			
			C	1	0.65	1	1	1	182.031			
Sum Weight:	8.485	34.536						OTM	1479.289 kip-ft	16.909		

Tower Forces - No Ice - Wind 60 (0)

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08- 167.25	0.094	1.597	A	1	0.65	1	1	1	43.341	1.426	0.062	C
			B	1	0.65	1	1	1	43.341			
			C	1	0.65	1	1	1	43.341			
L2 167.25- 133.58	1.143	3.751	A	1	0.65	1	1	1	82.421	2.579	0.077	C
			B	1	0.65	1	1	1	82.421			
			C	1	0.65	1	1	1	82.421			
L3 133.58- 100.75	1.753	5.680	A	1	0.65	1	1	1	101.397	2.954	0.090	C
			B	1	0.65	1	1	1	101.397			
			C	1	0.65	1	1	1	101.397			
L4 100.75- 68.75	1.740	6.811	A	1	0.65	1	1	1	118.333	3.142	0.098	C
			B	1	0.65	1	1	1	118.333			
			C	1	0.65	1	1	1	118.333			
L5 68.75-37.5	1.707	7.903	A	1	0.65	1	1	1	133.952	3.110	0.100	C
			B	1	0.65	1	1	1	133.952			
			C	1	0.65	1	1	1	133.952			
L6 37.5-0	2.048	8.794	A	1	0.65	1	1	1	182.031	3.698	0.099	C
			B	1	0.65	1	1	1	182.031			
			C	1	0.65	1	1	1	182.031			
Sum Weight:	8.485	34.536						OTM	1479.289 kip-ft	16.909		

Tower Forces - No Ice - Wind 90

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08-	0.094	1.597	A	1	0.65	1	1	1	43.341	1.426	0.062	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
167.25			B	1	0.65	1	1	1	43.341			
			C	1	0.65	1	1	1	43.341			
L2 167.25- 133.58	1.143	3.751	A	1	0.65	1	1	1	82.421	2.579	0.077	C
			B	1	0.65	1	1	1	82.421			
			C	1	0.65	1	1	1	82.421			
L3 133.58- 100.75	1.753	5.680	A	1	0.65	1	1	1	101.397	2.954	0.090	C
			B	1	0.65	1	1	1	101.397			
			C	1	0.65	1	1	1	101.397			
L4 100.75- 68.75	1.740	6.811	A	1	0.65	1	1	1	118.333	3.142	0.098	C
			B	1	0.65	1	1	1	118.333			
			C	1	0.65	1	1	1	118.333			
L5 68.75-37.5	1.707	7.903	A	1	0.65	1	1	1	133.952	3.110	0.100	C
			B	1	0.65	1	1	1	133.952			
			C	1	0.65	1	1	1	133.952			
L6 37.5-0	2.048	8.794	A	1	0.65	1	1	1	182.031	3.698	0.099	C
			B	1	0.65	1	1	1	182.031			
			C	1	0.65	1	1	1	182.031			
Sum Weight:	8.485	34.536						OTM	1479.289 kip-ft	16.909		

Tower Forces - With Ice - Wind Normal (180)

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08- 167.25	0.094	1.922	A	1	0.65	1	1	1	45.244	1.128	0.049	C
			B	1	0.65	1	1	1	45.244			
			C	1	0.65	1	1	1	45.244			
L2 167.25- 133.58	1.143	4.366	A	1	0.65	1	1	1	85.227	2.021	0.060	C
			B	1	0.65	1	1	1	85.227			
			C	1	0.65	1	1	1	85.227			
L3 133.58- 100.75	1.753	6.433	A	1	0.65	1	1	1	104.133	2.299	0.070	C
			B	1	0.65	1	1	1	104.133			
			C	1	0.65	1	1	1	104.133			
L4 100.75- 68.75	1.740	7.688	A	1	0.65	1	1	1	121.000	2.435	0.076	C
			B	1	0.65	1	1	1	121.000			
			C	1	0.65	1	1	1	121.000			
L5 68.75-37.5	1.707	8.894	A	1	0.65	1	1	1	136.556	2.403	0.077	C
			B	1	0.65	1	1	1	136.556			
			C	1	0.65	1	1	1	136.556			
L6 37.5-0	2.048	10.140	A	1	0.65	1	1	1	185.156	2.851	0.076	C
			B	1	0.65	1	1	1	185.156			
			C	1	0.65	1	1	1	185.156			
Sum Weight:	8.485	39.443						OTM	1154.430 kip-ft	13.138		

Tower Forces - With Ice - Wind 60 (0)

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08- 167.25	0.094	1.922	A	1	0.65	1	1	1	45.244	1.128	0.049	C
			B	1	0.65	1	1	1	45.244			
			C	1	0.65	1	1	1	45.244			
L2 167.25- 133.58	1.143	4.366	A	1	0.65	1	1	1	85.227	2.021	0.060	C
			B	1	0.65	1	1	1	85.227			
			C	1	0.65	1	1	1	85.227			
L3 133.58- 100.75	1.753	6.433	A	1	0.65	1	1	1	104.133	2.299	0.070	C
			B	1	0.65	1	1	1	104.133			
			C	1	0.65	1	1	1	104.133			
L4 100.75- 68.75	1.740	7.688	A	1	0.65	1	1	1	121.000	2.435	0.076	C
			B	1	0.65	1	1	1	121.000			
			C	1	0.65	1	1	1	121.000			
L5 68.75-37.5	1.707	8.894	A	1	0.65	1	1	1	136.556	2.403	0.077	C
			B	1	0.65	1	1	1	136.556			
			C	1	0.65	1	1	1	136.556			
L6 37.5-0	2.048	10.140	A	1	0.65	1	1	1	185.156	2.851	0.076	C
			B	1	0.65	1	1	1	185.156			
			C	1	0.65	1	1	1	185.156			
Sum Weight:	8.485	39.443						OTM	1154.430 kip-ft	13.138		

Tower Forces - With Ice - Wind 90

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
L1 190.08- 167.25	0.094	1.922	A	1	0.65	1	1	1	45.244	1.128	0.049	C
			B	1	0.65	1	1	1	45.244			
			C	1	0.65	1	1	1	45.244			
L2 167.25- 133.58	1.143	4.366	A	1	0.65	1	1	1	85.227	2.021	0.060	C
			B	1	0.65	1	1	1	85.227			
			C	1	0.65	1	1	1	85.227			
L3 133.58- 100.75	1.753	6.433	A	1	0.65	1	1	1	104.133	2.299	0.070	C
			B	1	0.65	1	1	1	104.133			
			C	1	0.65	1	1	1	104.133			
L4 100.75- 68.75	1.740	7.688	A	1	0.65	1	1	1	121.000	2.435	0.076	C
			B	1	0.65	1	1	1	121.000			
			C	1	0.65	1	1	1	121.000			
L5 68.75-37.5	1.707	8.894	A	1	0.65	1	1	1	136.556	2.403	0.077	C
			B	1	0.65	1	1	1	136.556			
			C	1	0.65	1	1	1	136.556			
L6 37.5-0	2.048	10.140	A	1	0.65	1	1	1	185.156	2.851	0.076	C
			B	1	0.65	1	1	1	185.156			
			C	1	0.65	1	1	1	185.156			
Sum Weight:	8.485	39.443						OTM	1154.430 kip-ft	13.138		

Discrete Forces - No Ice

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Section Elevation ft	Add Weight K	z ft	K _z	q _z ksf	G _H	C _A A _C ft ²	t _z in	F _C K
170	0.220	170.000	1.597	0.030	1.690	45.080		2.251
160	0.220	160.000	1.570	0.029	1.690	45.080		2.212
150	0.220	150.000	1.541	0.029	1.690	45.080		2.172
140	0.220	140.000	1.511	0.028	1.690	45.080		2.129
190	0.050	190.000	1.649	0.030	1.690	6.000		0.309
185	0.100	185.000	1.636	0.030	1.690	12.600		0.645
180	0.030	180.000	1.624	0.030	1.690	3.600		0.183
190	0.863	190.000	1.649	0.030	1.690	10.770		0.555
190	0.030	190.000	1.649	0.030	1.690	1.830		0.094
185	0.644	185.000	1.636	0.030	1.690	7.320		0.374
185	0.030	185.000	1.636	0.030	1.690	1.830		0.094
180	0.863	180.000	1.624	0.030	1.690	10.770		0.547
180	0.015	180.000	1.624	0.030	1.690	0.920		0.047
170	1.500	170.000	1.597	0.030	1.690	17.300		0.864
160	1.500	160.000	1.570	0.029	1.690	17.300		0.849
150	1.500	150.000	1.541	0.029	1.690	17.300		0.833
140	1.500	140.000	1.511	0.028	1.690	17.300		0.817
113	0.075	113.000	1.421	0.026	1.690	9.000		0.400
90	0.135	90.000	1.332	0.025	1.690	16.200		0.674
113	0.863	113.000	1.421	0.026	1.690	10.770		0.479
113	0.045	113.000	1.421	0.026	1.690	2.750		0.122
90	0.135	90.000	1.332	0.025	1.690	10.770		0.448
90	0.045	90.000	1.332	0.025	1.690	2.750		0.114
Sum Weight:	10.803					OTM	2634.728 kip-ft	17.213

Discrete Forces - With Ice

Section Elevation ft	Add Weight K	z ft	K _z	q _z ksf	G _H	C _A A _C ft ²	t _z in	F _C K
170	0.264	170.000	1.597	0.022	1.690	50.260	0.500	1.902
160	0.264	160.000	1.570	0.022	1.690	50.260	0.500	1.869
150	0.264	150.000	1.541	0.022	1.690	50.260	0.500	1.835
140	0.264	140.000	1.511	0.021	1.690	50.260	0.500	1.799
190	0.092	190.000	1.649	0.023	1.690	8.000	0.500	0.313
185	0.100	185.000	1.636	0.023	1.690	12.600	0.500	0.488
180	0.056	180.000	1.624	0.023	1.690	4.800	0.500	0.185
190	0.979	190.000	1.649	0.023	1.690	11.790	0.500	0.461
190	0.046	190.000	1.649	0.023	1.690	2.280	0.500	0.089
185	0.713	185.000	1.636	0.023	1.690	7.970	0.500	0.309
185	0.046	185.000	1.636	0.023	1.690	2.280	0.500	0.088
180	0.979	180.000	1.624	0.023	1.690	11.790	0.500	0.454
180	0.023	180.000	1.624	0.023	1.690	1.140	0.500	0.044
170	2.030	170.000	1.597	0.022	1.690	22.100	0.500	0.836
160	2.030	160.000	1.570	0.022	1.690	22.100	0.500	0.822
150	2.030	150.000	1.541	0.022	1.690	22.100	0.500	0.807
140	2.030	140.000	1.511	0.021	1.690	22.100	0.500	0.791
113	0.138	113.000	1.421	0.020	1.690	12.000	0.500	0.404
90	0.249	90.000	1.332	0.019	1.690	21.600	0.500	0.682
113	0.979	113.000	1.421	0.020	1.690	11.790	0.500	0.397
113	0.069	113.000	1.421	0.020	1.690	3.420	0.500	0.115
90	0.249	90.000	1.332	0.019	1.690	11.790	0.500	0.372
90	0.069	90.000	1.332	0.019	1.690	3.420	0.500	0.108
Sum Weight:	13.963					OTM	2313.731 kip-ft	15.171

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Dish Forces - No Ice

Section Elevation ft	Dish Type	Add Weight K	K_z	A_A ft ²	C_A	q_z ksf	t_z in	F_C K
190.000	Grid	0.087	1.649	12.566	0.00152	0.030		0.385
180.000	Grid	0.087	1.624	12.566	0.00152	0.030		0.379
	Sum Weight:	0.174				OTM	141.230 kip-ft	0.763

Dish Forces - With Ice

Section Elevation ft	Dish Type	Add Weight K	K_z	A_A ft ²	C_A	q_z ksf	t_z in	F_C K
190.000	Grid	0.130	1.649	13.095	0.00426	0.023	0.500	0.851
180.000	Grid	0.130	1.624	13.095	0.00426	0.023	0.500	0.838
	Sum Weight:	0.260				OTM	312.628 kip-ft	1.690

Force Totals

Load Case	Sum of Forces K	Total Weight K	Sum of Torques kip-ft	Sum of Offset Weight Overturning Moments, M_x kip-ft	Sum of Offset Weight Overturning Moments, M_z kip-ft	Sum of Wind Overturning Moments kip-ft
Total Member Self-Weight		34.536				
Wind Normal	34.885	53.998	0.000	0.000	0.000	4255.247
Wind 60	34.885	53.998	0.000	0.000	0.000	4255.247
Wind 90	34.885	53.998	0.000	0.000	0.000	4255.247
Member Ice		4.907				
Wind Normal - Ice	29.998	62.151	0.000	0.000	0.000	3780.788
Wind 60 - Ice	29.998	62.151	0.000	0.000	0.000	3780.788
Wind 90 - Ice	29.998	62.151	0.000	0.000	0.000	3780.788

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind Normal
3	Dead+Wind 60
4	Dead+Wind 90
5	Dead+Ice+Temp
6	Dead+Wind Normal+Ice+Temp
7	Dead+Wind 60+Ice+Temp
8	Dead+Wind 90+Ice+Temp

Maximum Member Forces

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	190.08 - 167.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-7.604	0.000	0.000
			Max. Mx	6	-6.781	-101.700	0.000
			Max. My	8	-6.781	0.000	-101.700
			Max. Vy	2	8.758	-96.007	0.000
			Max. Vx	4	8.758	0.000	-96.007
L2	167.25 - 133.58	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-19.994	0.000	0.000
			Max. Mx	2	-14.287	-593.772	0.000
			Max. My	4	-14.287	0.000	-593.772
			Max. Vy	2	21.218	-593.772	0.000
			Max. Vx	4	21.218	0.000	-593.772
L3	133.58 - 100.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-29.367	0.000	0.000
			Max. Mx	2	-22.770	-1349.475	0.000
			Max. My	4	-22.770	0.000	-1349.475
			Max. Vy	2	25.539	-1349.475	0.000
			Max. Vx	4	25.539	0.000	-1349.475
L4	100.75 - 68.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-39.361	0.000	0.000
			Max. Mx	2	-31.922	-2232.998	0.000
			Max. My	4	-31.922	0.000	-2232.998
			Max. Vy	2	29.910	-2232.998	0.000
			Max. Vx	4	29.910	0.000	-2232.998
L5	68.75 - 37.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-49.962	0.000	0.000
			Max. Mx	2	-42.055	-3197.983	0.000
			Max. My	4	-42.055	0.000	-3197.983
			Max. Vy	2	32.656	-3197.983	0.000
			Max. Vx	4	32.656	0.000	-3197.983
L6	37.5 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-62.151	0.000	0.000
			Max. Mx	2	-53.580	-4456.365	0.000
			Max. My	4	-53.580	0.000	-4456.365
			Max. Vy	2	35.523	-4456.365	0.000
			Max. Vx	4	35.523	0.000	-4456.365

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	6	62.151	0.000	29.998
	Max. H _x	3	53.998	0.000	-34.885
	Max. H _z	2	53.998	0.000	34.885
	Max. M _x	2	4456.365	0.000	34.885
	Max. M _z	4	4456.365	-34.885	0.000
	Max. Torsion	1	0.000	0.000	0.000
	Min. Vert	1	53.998	0.000	0.000
	Min. H _x	4	53.998	-34.885	0.000
	Min. H _z	3	53.998	0.000	-34.885

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. M _x	3	-4456.365	0.000	-34.885
	Min. M _y	3	0.000	0.000	-34.885
	Min. Torsion	2	0.000	0.000	34.885

Tower Mast Reaction Summary

Load Combination	Torsion kip-ft	Shear K	Vertical K	Overturning kip-ft
Dead Only	0.000	0.000	53.998	0.000
Dead+Wind Normal	0.000	34.885	53.998	4456.365
Dead+Wind 60	0.000	34.885	53.998	4456.365
Dead+Wind 90	0.000	34.885	53.998	4456.365
Dead+Ice+Temp	0.000	0.000	62.151	0.000
Dead+Wind	0.000	29.998	62.151	4002.156
Normal+Ice+Temp				
Dead+Wind 60+Ice+Temp	0.000	29.998	62.151	4002.156
Dead+Wind 90+Ice+Temp	0.000	29.998	62.151	4002.156

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-53.998	0.000	0.000	53.998	0.000	0.000%
2	0.000	-53.998	-34.885	0.000	53.998	34.885	0.000%
3	0.000	-53.998	34.885	0.000	53.998	-34.885	0.000%
4	34.885	-53.998	0.000	-34.885	53.998	0.000	0.000%
5	0.000	-62.151	0.000	0.000	62.151	0.000	0.000%
6	0.000	-62.151	-29.998	0.000	62.151	29.998	0.000%
7	0.000	-62.151	29.998	0.000	62.151	-29.998	0.000%
8	29.998	-62.151	0.000	-29.998	62.151	0.000	0.000%

Maximum Tower Deflections

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt deg	Twist deg
L1	190.08 - 167.25	137.978	2	6.085	0.000
L2	167.25 - 133.58	109.204	2	5.912	0.000
L3	133.58 - 100.75	70.284	2	5.031	0.000
L4	100.75 - 68.75	39.752	2	3.850	0.000
L5	68.75 - 37.5	18.260	2	2.594	0.000
L6	37.5 - 0	5.335	2	1.394	0.000

Critical Deflections and Radius of Curvature

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	deg	deg	ft
190.000	4' Grid Dish	2	137.876	6.085	0.000	15377
190.000	(2) TDF7220	2	137.876	6.085	0.000	15377
190.000	2&3-ARM CLAMP-ON (5')	2	137.876	6.085	0.000	15377
190.000	N-PIPE 2"x50"	2	137.876	6.085	0.000	15377
185.000	(2) Yagi	2	131.514	6.064	0.000	15135
185.000	2&3-ARM CLAMP-ON (2')	2	131.514	6.064	0.000	15135
185.000	N-PIPE 2"x50"	2	131.514	6.064	0.000	15135
180.000	4' Grid Dish	2	125.170	6.037	0.000	7626
180.000	TDD7260	2	125.170	6.037	0.000	7626
180.000	2&3-ARM CLAMP-ON (5')	2	125.170	6.037	0.000	7626
180.000	N-PIPE 2"x50"	2	125.170	6.037	0.000	7626
170.000	(12) DAPA 48000	2	112.612	5.949	0.000	3831
170.000	Low profile platform	2	112.612	5.949	0.000	3831
160.000	(12) DAPA 48000	2	100.348	5.782	0.000	2791
160.000	Low profile platform	2	100.348	5.782	0.000	2791
150.000	(12) DAPA 48000	2	88.506	5.539	0.000	2258
150.000	Low profile platform	2	88.506	5.539	0.000	2258
140.000	(12) DAPA 48000	2	77.202	5.241	0.000	1852
140.000	Low profile platform	2	77.202	5.241	0.000	1852
113.000	(3) TDD7260	2	50.161	4.309	0.000	1536
113.000	2&3-ARM CLAMP-ON (5')	2	50.161	4.309	0.000	1536
113.000	N-PIPE 2"x50"	2	50.161	4.309	0.000	1536
90.000	(3) TDB6400	2	31.622	3.433	0.000	1502
90.000	2&3-ARM CLAMP-ON (5')	2	31.622	3.433	0.000	1502
90.000	N-PIPE 2"x50"	2	31.622	3.433	0.000	1502

Non-Linear Convergence Results

Load Combination.	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00000001
3	Yes	5	0.00000001	0.00000001
4	Yes	5	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	5	0.00000001	0.00000001
7	Yes	5	0.00000001	0.00000001
8	Yes	5	0.00000001	0.00000001

Compression Checks**Pole Design Data:**

Section No.	Elevation	Size	L	L _n	Kl/r	F _a	A	Actual P	Allow. P _a	Ratio P/P _a
	ft		ft	ft		ksi	in ²	K	K	
L1	190.08 - 167.25	TP26x19.563x0.25	22.830	22.830	249.2	2.404	20.433	-6.781	49.128	0.138
L2	167.25 -	TP34.063x24.688x0.313	33.670	33.670	190.1	4.130	33.476	-18.310	138.271	0.132

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Section No.	Elevation ft	Size	L ft	L _u ft	KL/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
L3	133.58 133.58 - 100.75	TP41.75x32.375x0.375	32.830	32.830	155.1	6.208	49.247	-22.770	305.707	0.074
L4	100.75 - 68.75	TP49.063x39.688x0.375	32.000	32.000	131.8	8.596	57.950	-31.922	498.131	0.064
L5	68.75 - 37.5	TP56.125x46.75x0.375	31.250	31.250	105.0	13.549	55.198	-37.306	747.870	0.050
L6	37.5 - 0	TP62.938x53.563x0.375	37.500	37.500	102.6	14.193	74.465	-53.581	1056.90	0.051
									0	

Pole Bending Design Data:

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	190.08 - 167.25	TP26x19.563x0.25	-101.700	9.274	39.000	0.238	0.000	0.000	39.000	0.000
L2	167.25 - 133.58	TP34.063x24.688x0.313	-572.416	24.298	39.000	0.623	0.000	0.000	39.000	0.000
L3	133.58 - 100.75	TP41.75x32.375x0.375	-	31.756	39.000	0.814	0.000	0.000	39.000	0.000
			1349.475							
L4	100.75 - 68.75	TP49.063x39.688x0.375	-	37.897	39.000	0.972	0.000	0.000	39.000	0.000
			2233.000							
L5	68.75 - 37.5	TP56.125x46.75x0.375	-	41.787	39.000	1.071	0.000	0.000	39.000	0.000
			2233.000							
L6	37.5 - 0	TP62.938x53.563x0.375	-	45.727	37.124	1.232	0.000	0.000	37.124	0.000
			4456.367							

Pole Shear Design Data:

Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	190.08 - 167.25	TP26x19.563x0.25	8.696	0.426	26.000	0.033	0.000	0.000	26.000	0.000
L2	167.25 - 133.58	TP34.063x24.688x0.313	19.648	0.587	26.000	0.045	0.000	0.000	26.000	0.000
L3	133.58 - 100.75	TP41.75x32.375x0.375	25.539	0.519	26.000	0.040	0.000	0.000	26.000	0.000
L4	100.75 - 68.75	TP49.063x39.688x0.375	29.910	0.516	26.000	0.040	0.000	0.000	26.000	0.000
L5	68.75 - 37.5	TP56.125x46.75x0.375	32.656	0.592	26.000	0.038	0.000	0.000	26.000	0.000
L6	37.5 - 0	TP62.938x53.563x0.375	35.523	0.477	26.000	0.037	0.000	0.000	26.000	0.000

Pole Interaction Design Data:

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Section No.	Elevation ft	Ratio P P_a	Ratio f_{bx} F_{bx}	Ratio f_{by} F_{by}	Ratio f_v F_v	Ratio f_{vt} F_{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	190.08 - 167.25	0.138	0.238	0.000	0.033	0.000	0.377 ✓	1.333	Von Mises ✓
L2	167.25 - 133.58	0.132	0.623	0.000	0.045	0.000	0.756 ✓	1.333	Von Mises ✓
L3	133.58 - 100.75	0.074	0.814	0.000	0.040	0.000	0.889 ✓	1.333	Von Mises ✓
L4	100.75 - 68.75	0.064	0.972	0.000	0.040	0.000	1.036 ✓	1.333	Von Mises ✓
L5	68.75 - 37.5	0.050	1.071	0.000	0.038	0.000	1.122 ✓	1.333	Von Mises ✓
L6	37.5 - 0	0.051	1.232	0.000	0.037	0.000	1.283 ✓	1.333	Von Mises ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Controlling Element	% Capacity	Pass Fail
L1	190.08 - 167.25	Pole	TP26x19.563x0.25	1	28.3	Pass
L2	167.25 - 133.58	Pole	TP34.063x24.688x0.313	2	56.7	Pass
L3	133.58 - 100.75	Pole	TP41.75x32.375x0.375	3	66.7	Pass
L4	100.75 - 68.75	Pole	TP49.063x39.688x0.375	4	77.7	Pass
L5	68.75 - 37.5	Pole	TP56.125x46.75x0.375	5	84.2	Pass
L6	37.5 - 0	Pole	TP62.938x53.563x0.375	6	96.2	Pass
					Summary	
					Pole	96.2
					RATING =	96.2
						Pass

Element Map

Section No.	Section Elevation ft	Component Type	Element List
L1	190.08-167.25	Pole	1
L2	167.25-133.58	Pole	2
L3	133.58-100.75	Pole	3
L4	100.75-68.75	Pole	4
L5	68.75-37.5	Pole	5
L6	37.5-0	Pole	6
			Total number of elements: 6

Job

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sheet

Description Evaluation of Base Plate and Anchor Bolts

Computed by

M.Sahirad

Date

ALLOWABLE STRESS DESIGN 9TH EDITION

Calculation of round Base Plate for 18 sided monopole with Base Plate Having 45 anchor bolts on a Circle

Service moment: $OM := 4456000 \cdot \text{lb} \cdot \text{ft}$ $NumberOfBolts := 45$ $Plygonside := 18$ $Df := 62.938 \cdot \text{in}$

outside diameter of pole' $P := 54000 \text{ lb}$ $Withofnut := 2.625$ $Withofweld := 0.5 \cdot \text{in}$ $BoltDiamiter := 1.25 \cdot \text{in}$

$$Dp := \frac{Df}{\cos\left(\frac{\pi}{Plygonside}\right)} \quad Dp = 63.91 \text{ in}$$

$wallthickness := 375 \cdot \text{in}$ $Clearance := 1.5 \cdot \text{in}$

$$BoltCircle := Dp + 2 \cdot Withofweld + Withofnut + Clearance \cdot 2$$

Use(round uo to nearest 1/8 inches)

$$BoltCircle = 70.534 \text{ in}$$

Bolt Circle used $BoltCircle := 68 \cdot \text{in}$
use 1.25 for cutina method

$$MinimumEdgeDistance := 1.25 \cdot BoltDiamiter$$

$$MinimumEdgeDistance = 1.56 \text{ in}$$

$$DiameterOfpalte := BoltCircle + 2 \cdot MinimumEdgeDistance$$

$$DiameterOfpalte = 71.13 \text{ in}$$

Use(round uo to nearest 1/4 inches)

$$DiameterOfpalte := 71 \cdot \text{in}$$

$$BoltSpacing := \pi \cdot \frac{BoltCircle}{NumberOfBolts}$$

$$BoltSpacing = 4.747 \text{ in} \quad (>3d \quad 3 \cdot BoltDiamiter = 3.75 \text{ in okay})$$

$$SectionModuli := NumberOfBolts \cdot \frac{BoltCircle^2}{8}$$

$$F_u := 150 \cdot \frac{10^3 \cdot \text{lb}}{\text{in}^2} \quad \text{ASTM A-572}$$

$$SectionModuli = 2.6 \times 10^4 \text{ in}^2$$

$$TensionPerBolt := \frac{OM \cdot \frac{BoltCircle}{2}}{SectionModuli} + \frac{P}{NumberOfBolts}$$

$$TensionPerBolt = 7.1098 \times 10^4 \text{ lb}$$

$$AllowableTension := \frac{4 \cdot 0.33 \cdot F_u \cdot BoltDiamiter^2 \cdot \pi}{3 \cdot 4}$$

$$AllowableTension = 8.0994 \times 10^4 \text{ lb}$$

$$d_1 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi \cdot 6}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_1 = 25.27 \text{ in}$$

$$d_2 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi \cdot 5}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_2 = 21.85 \text{ in}$$

$$d_3 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi \cdot 4}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_3 = 18.02 \text{ in}$$

$$d_4 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi \cdot 3}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_4 = 13.83 \text{ in}$$

$$d_5 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi \cdot 2}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_5 = 9.37 \text{ in}$$

$$d_6 := \sin\left(\frac{360}{NumberOfBolts} \cdot \frac{\pi}{180}\right) \cdot \frac{BoltCircle}{2}$$

$$d_6 = 4.73 \text{ in}$$

Increase allowable by 1.333 per TIA/EIA

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$$\text{StressRatio} := \frac{\text{TensionPerBolt}}{\text{AllowableTension}} \quad \text{This value must be equal or Less than 1}$$

$$\text{StressRatio} = 0.878$$

$$\text{resultant loaction} = e$$

$$e := \frac{OM}{P} \quad e = 990.22 \text{ in}$$

$$T_1 := \frac{P \cdot e \cdot d_1}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_3 := \frac{P \cdot e \cdot d_3}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_2 := \frac{P \cdot e \cdot d_2}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_4 := \frac{P \cdot e \cdot d_4}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_5 := \frac{P \cdot e \cdot d_5}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_6 := \frac{P \cdot e \cdot d_6}{\text{SectionModuli}} + \frac{P}{\text{NumberOfBolts}}$$

$$T_1 = 5.3144 \times 10^4 \text{ lb} \quad T_2 = 4.613 \times 10^4 \text{ lb}$$

$$T_3 = 3.824 \times 10^4 \text{ lb} \quad T_4 = 1.0546 \times 10^5 \text{ lb}$$

$$T_5 = 2.0467 \times 10^4 \text{ lb} \quad T_6 = 1.0928 \times 10^4 \text{ lb}$$

$$\text{Eccentricity} := \frac{\text{BoltCircle} - D_p}{2}$$

$$\text{Eccentricity} = 2.05 \text{ in}$$

$$F_y := 50 \cdot 10^3 \cdot \frac{\text{lb}}{\text{in}^2} \quad \text{Grade 50 steel}$$

$$\text{EffectiveWidth} := \frac{(\text{Dp} + \text{BoltCircle})}{2} \cdot \pi$$

$$\text{EffectiveWidth} = 4.604 \text{ in}$$

$$\text{Platethickness} := \sqrt{\frac{(T_1 + 2 \cdot T_2 + 2 \cdot T_3) \cdot \text{Eccentricity} \cdot 6}{.75 \cdot F_y \cdot 1.333 \cdot [\text{EffectiveWidth} \cdot (n + 1)]}} \quad n := 5$$

Increase fy by 1.333 per TIA/EIA

$$\text{Platethickness} = 1.4 \text{ in} \quad \text{used } 1.5 \text{ in}$$

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Date 12/04/01

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SERVICE LOADS AT BASE OF THE MONOPOLE

	Design Loading
Moment, kip-ft	4456.0
Shear, kips	35.0
Axial Load, kips	54.0

Based on URS result

Anchor Bolts	Quantity	45.0
	Length, ft	4.3
	Circle Dia., in	68.0
	Projection, in	8.5

Foundation Parameters

Pedestal Min. Width, in	86.00
Pedestal Projection, in	6.0
Found. Min Height, ft	4.0

	Height, ft	Width, ft	Soil Unit Wt., pcf	55.00
Footing	2.50	29.00	Concrete Unit Wt., pc	87.60
Pedestal	5.00	7.50	Angle of friction	32.00

Foundation Weight, kips	208.82
Concrete, cub.yd.	88.29
Soil Weight, kips	237.20
Total Vertical Load, kips	500.02
Kern of Eccentricity, ft	4.83
Actual Eccentricity, ft	9.44
Overturning Moment, kip-ft	4718.50
Resisting Moment, kip-ft	7250.24
Allowable Gross Soil Pressure, ksf	4.0
Allowable Net Soil Pressure, ksf	0.0
Gross Soil Pressure, (Service Load), ksf	

H= 4.50
B= 34.62

(gross) (net)
max q= 2.27 1.74
min q= 0.00

Safety Factor	Sf=	1.54
----------------------	------------	-------------

ULTIMATE STRENGTH DESIGN OF FOOTING

CONCRETE, psi	4000
STEEL, KSI	60

SHEAR IN FOOTING

1. CASE I -DEAD LOAD, TWO-WAY SHEAR

$$U= 1.4 \cdot D$$

Ultimate Vertical Load, kips	700.02	
Ultimate Pressure, ksf	0.83	
Ultimate shear V, kips	624.90	
Design shear Vn, kips	2353.34	Okay

2. CASE II - WIND LOAD, ONE-WAY SHEAR

$$U=0.9 \cdot D+1.3 \cdot W$$

Ultimate Moment, kip-ft	6134.05	
Ultimate Vertical Load, kips	450.01	
Eccentricity, ft	13.63	
Ultimate Pressure, ksf	11.90	qult=
Dist. from edge to critical sect., ft	8.75	
Pressure distance ft	2.61	c=
Pressure @ critical section, ksf	0.00	
Ultimate Shear, kips	450.01	
Design Shear, kips	897.99	Okay

FLEXURE STRENGTH DESIGN

Ultimate Moment, kip-ft		Case I	1394.77	q1=	0.00
		Case II	4446.49		
Coefficient of Resistance		Rn=	295.8		
Reinforcement Ratio		r=	0.00516		
Min. Reinforcement Ratio		r min	0.00180		
Min. Steel Area, sq.in.		A1	43.14		
Type of Bars		#	9		
		Ab,in^2=	1.00		
BOTTOM	Min. Number of Bars		21.57	Okay	
	Actual Number of Bars		37.00		
	Actual Steel Area, sq.in.		37.00		
	Steel Ratio Actual	ra=	0.00443		
	Revised Coef. of Resist	Rn=	265.76		
	Design Moment, kip-ft		3995.30		
	Horizontal Spacing, in	shor=	9.50		
TOP	Min. Steel Area, sq.in		15.03	Okay	
	Min. Number of Bars		15.03		
	Actual Number of Bars		37.00		
	Top Steel Area, sq.in		37.00		
	Horizontal Spacing, in	shor=	9.50		

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PEDESTAL DESIGN

Pedestal Width, in	90	Ultim. Moment	6043.1
Concrete, ksi	4		
Reinforcement, ksi	60	Rebars, #	9
Rebars, #	40	Area, sq.in	1.00
Design Rebars	24	Area, sq.in	1.67
Minimum reinforcement ratio	0.0033	Rebar space, in	6.52
Actual reinforcement ratio	0.0049		
Concrete cover, in	3		
Rebar layout radius, in	41.50		

Bending about the major axis

No.	Angle, deg	Coord., in	Edge Dist., in	No.	Angle, deg	Coord., in	Edge Dist., in
	0	41.50	3.50	13	180	-41.50	86.50
1	15	40.09	4.91	14	195	-40.09	85.09
2	30	35.94	9.06	15	210	-35.94	80.94
3	45	29.34	15.66	16	225	-29.34	74.34
4	60	20.75	24.25	17	240	-20.75	65.75
5	75	10.74	34.26	18	255	-10.74	55.74
6	90	0.00	45.00	19	270	0.00	45.00
7	105	-10.74	55.74	20	285	10.74	34.26
8	120	-20.75	65.75	21	300	20.75	24.25
9	135	-29.34	74.34	22	315	29.34	15.66
10	150	-35.94	80.94	23	330	35.94	9.06
11	165	-40.09	85.09	24	345	40.09	4.91
12							

7.0645

6.00

Location of neutral axis c_n , in
Compression zone

No.	e	Force kips
1	0.0015	67.50
2	0.0009	38.47
24	0.0009	38.47
23		
3		

 $e_u =$

0.003

Concrete, kips

1837.48

Tension
zone

 $e_y =$ 0.00207

No.	e	Force kips
2		
3	0.0008	40.96
4	0.0036	100.00
5	0.0073	100.00
6	0.0115	100.00
7	0.0161	100.00
8	0.0207	100.00
9	0.0249	100.00
10	0.0286	100.00
11	0.0314	100.00
12	0.0331	100.00
13	0.0337	100.00
14	0.0331	100.00
15	0.0314	100.00
16	0.0286	100.00
17	0.0249	100.00
18	0.0207	100.00
19	0.0161	100.00
20	0.0115	100.00
21	0.0073	100.00
22	0.0036	100.00
23	0.0008	40.96

Total compression

1981.91

Total tension, kips 1981.91

Moment due to tension

Moment Rebars	Force kips	Mom. Arm. in	Moment k-ft
	67.50	41.50	233.42
1	38.47	40.09	128.51
2	38.47	40.09	128.51
23			
Concrete	1837.48	42.00	6430.80

Rebars	Force kips	Mom. Arm. in	Moment k-ft
2	0.00	40.09	0.00
3	40.96	35.94	-122.67
4	100.00	29.34	-244.54
5	100.00	20.75	-172.92
6	100.00	10.74	-89.51
7	100.00	0.00	0.00
8	100.00	-10.74	89.51
9	100.00	-20.75	172.92
10	100.00	-29.34	244.54
11	100.00	-35.94	299.50
12	100.00	-40.09	334.05
13	100.00	-41.50	345.83
14	100.00	-40.09	334.05
15	100.00	-35.94	299.50
16	100.00	-29.34	244.54
17	100.00	-20.75	172.92
18	100.00	-10.74	89.51
19	100.00	0.00	0.00
20	100.00	10.74	-89.51
21	100.00	20.75	-172.92
22	100.00	29.34	-244.54
23	40.96	35.94	-122.67

Total in compression 6921.24

Total in tension 1367.60

7459.96 Okay

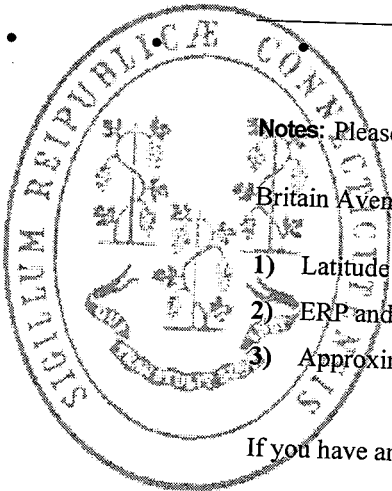
Connecticut Siting Council
Ten Franklin Square
New Britain, Conn. 06051

Phone: (860) 827-2935
Fax: (860) 827-2950

Facsimile Transmittal

To: Thomas J. Regan Fax: 860.509.6501
From: Robert Mercier - CT Siting Council Date: 01/22/02
Re: Sprint tower share - Farmington Pages: 1
CC: (including cover sheet)

☐ Urgent ☐ For Review ☒ Please Comment ☐ Please Reply ☐ Please Recycle



Notes: Please provide the following information for the Tower Sharing Request at 319-321 New Britain Avenue, Farmington for Sprint.

- 1) Latitude and Longitude coordinates
- 2) ERP and number of channels for the proposed Verizon antennas
- 3) Approximate date of tower construction and antenna installation

If you have any questions regarding this information request, please contact me at 860.827.2966

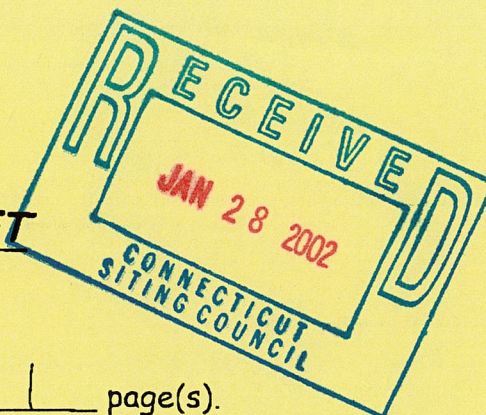
Thank you



BROWN
RUDNICK
FREED &
GESMER

TS-Sprint-052-020118

FAX COVER SHEET



DATE: January 28, 2002

This transmission consists of this cover sheet and 1 page(s).

ORIGINAL DOCUMENT TO FOLLOW:

YES ☐ NO ☒

DELIVER TO:	COMPANY/FIRM:	FAX NUMBER:	PHONE NUMBER:
ROBERT MERCIER	Connecticut Siting Council Ten Franklin Square New Britain, CT 06051	860/827-2950	860/827-2935

Our facsimile number is: (860)509-6501

From: THOMAS J. REGAN
Phone: 860/509-6522
E-Mail: tregan@brfg.com
C/M/A #: 80563/2875/825

MESSAGE

RE: SPRINT

SPECTRUM/Farmington
TS-SPRINT-052-020118

Attached is a copy of an FAA 2-C Survey Certification in connection with the referenced matter.

If you do not receive all pages, please call (860) 509-6542 and ask for Office Services.

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Professional Corporations

CityPlace I
185 Asylum Street
Hartford, CT 06103-3402
Tel: (860) 509-6500
Fax: (860) 509-6501

FAA 2-C SURVEY CERTIFICATION

Applicant: Sprint PCS
1 International Boulevard
Mahwah, NJ 07495

Site Name: Farmington Police Dept.
Site Number: CT33XC534
Site Address: New Britain Avenue
Farmington, Connecticut

Horizontal Datum: ☒ GPS survey ☐ Ground survey

Vertical Datum: NGVD 1929 (AMSL) ☐ GPS survey

Structure Type: ☒ New Tower ☐ Existing Tower ☐ Roof Top
☐ Water Tank ☐ Smoke Stack ☐ Other _____

Latitude: 41° 44' 59.38"

Longitude: 72° 52' 21.72"

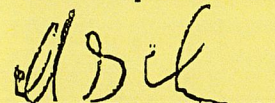
Ground Elevation: 190 AMSL Elevation (in feet)

**Proposed
Top of Structure:** 380 AMSL Elevation (in feet)

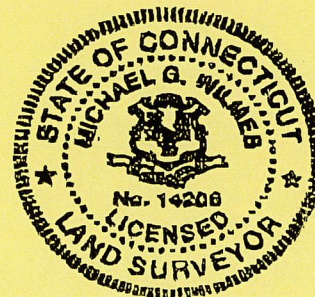
Certification: I Certify that the latitude of 41° 44' 59.38" and the longitude of 72° 52' 21.72" are accurate to within +/- 50 feet horizontally, and that the site elevation of 190' AMSL is accurate to within +/- 20 feet vertically. With a proposed structure height of 190' AGL, the overall height will be 380' AMSL. The horizontal datum (coordinated) are in terms of the North American Datum of 1983 (NAD 83) and are expressed in degrees, minutes and seconds, to the nearest hundredth of a second. The vertical datum (heights) are in terms of the National Geodetic Vertical Datum of 1929 and are determined to the nearest foot.

Company: URS Corporation AES

**Surveyor
Signature/Seal:**


Michael G. Wilmes L.S. 14206

Date: February 28, 2001



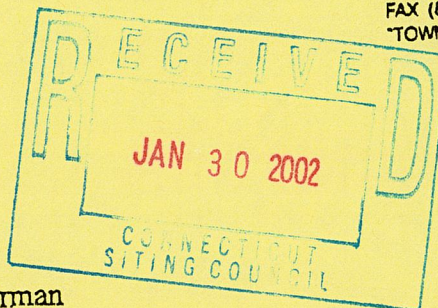
01/30/02 12:03 FAX 860 675 7140 TOWN OF FARMINGTON 2002

THE TOWN OF FARMINGTON

INCORPORATED 1645



TOWN HALL
1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 06032-1053
INFORMATION (860) 675-2300
FAX (860) 675-7140
"TOWN TALK" (860) 675-2301



January 29, 2002

The Honorable Mortimer A. Gelson, Chairman
The Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051

Re: Application of Sprint Spectrum (TS-Sprint-052-020118)
319-321 New Britain Avenue, Farmington

Dear Chairman Gelson

The Town of Farmington would like to express its support of the above referenced application pending before the Connecticut Siting Council. As indicated in the applicant's Tower Sharing Proposal, the Farmington Town Plan and Zoning Commission approved the construction of a 190 foot monopole tower on the subject property in July of 2001. This tower has also received the approval of the Connecticut Department of Environmental Protection.

It is our hope that several telecommunication service providers will co-locate on this tower, thus avoiding the need to construct an additional facility in the Unionville area.

Thank you for the opportunity to comment on this proposal.

Sincerely

Kathleen A. Eagen

Town Manager

c. Arline Whitaker, Chairman Farmington Town Council
Jeff Ollendorf, Farmington Town Planner

AN EQUAL OPPORTUNITY EMPLOYER



THOMAS J. REGAN
ATTORNEY AT LAW

Direct Dial: 860.509.6522
E-Mail: tregan@brfg.com

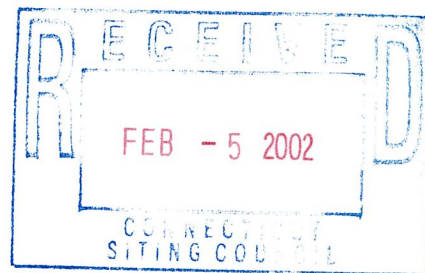
<http://www.brownrudnick.com>

VIA HAND DELIVERY

February 5, 2002

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

RE: TS-SPRINT-052-020118



Dear Chairman Gelston:

I enclose herewith for filing an original and twenty (20) copies of my letter of February 4, 2002, with exhibits attached in connection with the above-referenced matter.

If you have any further questions, do not hesitate to contact the undersigned directly.

Very truly yours,

BROWN RUDNICK FREED & GESMER, P.C.

By: _____

TJR/bh
Enclosures

cc/encl: Michael Whalen, Farmington Chief of Police
Mr. Thomas Kincaid, Sprint Spectrum, L.P.

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Professional Corporations

CITYPLACE I
185 ASYLUM STREET
HARTFORD, CONNECTICUT 06103-3402
860-509-6500
Fax: 860-509-6501

Boston / Providence / London / Belgium

THOMAS J. REGAN
ATTORNEY AT LAW

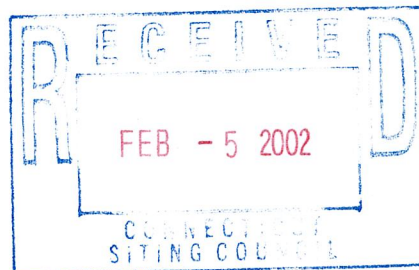
Direct Dial: 860.509.6522
E-Mail: tregan@brfg.com

<http://www.brownrudnick.com>

VIA HAND DELIVERY

February 4, 2002

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



RE: TS-SPRINT-052-020118

Dear Chairman Gelston:

At the Connecticut Siting Council's (the "Council") regularly scheduled meeting on January 31, 2002, the Council agreed to table its decision on the Sprint Spectrum, L.P. d/b/a Sprint PCS ("Sprint") Tower Sharing Proposal dated January 18, 2002 (the "Proposal") on the basis that the tower in question had not been constructed. Sprint would like to take this opportunity to provide the Council with additional background on its Proposal, and the need for approval of this Proposal prior to the construction of the tower.

In November 2000, the Town of Farmington (the "Town") sent out a Request for Proposal ("RFP") "to construct a communication tower and support building, to be deeded to the Town for no cost, on property owned by the Town known as lots 319-321 New Britain Avenue, Unionville, Ct." (the RFP and its Addendum are attached hereto as Exhibit A). The subject property is the site of the Town's new police headquarters. The tower's primary user will be the Town, which will be placing all of its public safety communication equipment on the top thirty (30) feet of the tower, as indicated in the site plan attached to the Proposal.

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Professional Corporations

CITYPLACE I
185 ASYLUM STREET
HARTFORD, CONNECTICUT 06103-3402
860-509-6500
Fax: 860-509-6501

Boston / Providence / London / Belgium

Mortimer A. Gelston, Chairman
February 1, 2002
Page 2

Sprint submitted its response to the RFP to the Town in December 2000. On January 19, 2001, Sprint was informed that it was among the finalists and was requested to submit additional information to the Town (a copy of the January 19, 2001 letter is attached hereto as Exhibit B). On February 5, 2001, the Town informed Sprint that it had selected Sprint to build the communications tower (a copy of the February 5, 2001 letter is attached hereto as Exhibit C).

On May 18, 2001 Sprint and the Town entered into a Lease Agreement, which was amended on December 14, 2001 (the Lease Agreement, as amended, is attached hereto as Exhibit D). In Paragraph 2 of the Lease Agreement, Sprint agreed to construct the tower on behalf of the Town. In consideration for Sprint constructing the tower for the Town at no cost to the Town, Sprint was granted a reduced monthly rent payment of \$1,060.00 for the collocation of its antennas on the tower.

The Town, acting through its Town Manager, Kathleen Egan, applied to the Farmington Planning and Zoning Commission (the "Planning and Zoning Commission") for a Special Permit to construct the tower on January 5, 2001 (a copy of which is attached hereto as Exhibit E). The Town was represented at the public hearings on the application by Attorney Kenneth Pocius and Police Chief Michael Whalen. Sprint, AT&T Wireless and Voicestream each submitted testimony in support of the application before the Planning and Zoning Commission, which unanimously approved the Special Permit on July 23, 2001 (a copy of the Planning and Zoning Commission approval is attached hereto as Exhibit F).

The Connecticut Department of Environmental Protection issued its final approval for the site on January 12, 2002.

Sprint, which acknowledges the Council as having primary jurisdiction for the siting of PCS facilities in Connecticut, then submitted its Proposal to the Council seeking the Council's approval to place its antennas on the Town tower. Sprint views the Council's approval of the Proposal as required prior to Sprint to releasing the funding necessary to construct the tower.


The Town is extremely eager to have Sprint begin construction of the tower. Once the tower is constructed, it will significantly improve the Town's public safety communication system. Therefore, based on the facts outlined herein, Sprint respectfully requests that the Council approve the Proposal.

Mortimer A. Gelston, Chairman
February 1, 2002
Page 3

If you have any further questions, do not hesitate to contact the undersigned or Farmington Police Chief Michael Whalen directly.

Very truly yours,

BROWN RUDNICK FREED & GESMER, P.C.

By: _____

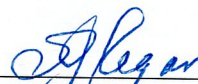
TJR/bh
Enclosures

cc/encl: Michael Whalen, Farmington Chief of Police
Mr. Thomas Kincaid, Sprint Spectrum, L.P.

Certificate of Service

This is to certify that on this 5th day of February 2002, a copy of a letter to the Connecticut Siting Council dated February 4, 2002 was sent, via first class mail, to the following:

Jeffrey Ollendorf, Town Planner Town of Farmington One Monteith Drive Farmington, CT 06032	Michael Whalen, Chief of Police Town of Farmington 319-321 New Britain Avenue Farmington, CT 06032
---	---

By: 
Thomas J. Regan, Esq.

**LEGAL NOTICE
REQUEST FOR PROPOSAL
COMMUNICATION TOWER CONSTRUCTION PROJECT**

The Town of Farmington invites firms to submit proposals to be considered for the construction of a communication tower on the property known as 319-321 New Britain Avenue, Unionville, Ct. Proposal specifications may be obtained at the Town Manager's Office, Town of Farmington, 1 Monteith Drive, Farmington, CT 06032-1053 or by calling 860-675-2350 or by requesting through e-mail at Bulld@Farmington-CT.org.

The Town of Farmington will hold a pre-proposal conference for any vendor questions, etc., on Monday, November 20, 2000 at 9:00AM at the Town Hall in the Council Chambers. A site visit will be included as part of the conference. All vendors are strongly urged to attend.

The RFP shall be submitted before 3:00PM on Friday, December 1, 2000. RFP shall be sent to: Lynne P. Celentano, Purchasing & Insurance Coordinator, Town of Farmington, Town Managers Office, 1 Monteith Drive, Farmington, CT 06032-1053. Facsimiles will not be accepted. Outside of envelope shall be marked as followed: RFP – Communication Tower.

The bidder is required to comply with all provisions of the Civil Rights Act of 1964, the Equal Employment Opportunity Act of 1972, Executive Orders 3, 17, 11246, 11375 11478 and if applicable, the Connecticut Fair Employment Practice Law.

The Town of Farmington reserves the right to accept or reject any or all proposals or parts thereof for any reason, to negotiate changes to proposal terms, to waive minor inconsistencies with the RFP and to negotiate a contract with the successful firm.

Lynne P. Celentano
Purchasing & Insurance Coordinator

Request for Proposal

Communication Tower Construction Project

The Town of Farmington will receive proposals to the attention of Lynne P. Celentano, Purchasing & Insurance Coordinator in the Town Managers Office, Farmington Town Hall, 1 Monteith Drive, Farmington, Connecticut 06032-1053 for construction and maintenance of a communication tower (not to exceed 200') as described in the descriptions described herein. Proposals must be received in the Town Manager's office by 3:00 P.M. on Friday, December 1, 2000. Facsimiles will not be accepted. All documents included in specifications must be completed and returned with proposal.

Technical questions may be directed to Chief Michael Whalen at 860-675-2450 or by e-mail at WhalenM@Farmington-CT.org.

Request For Proposal Farmington Police Communication Tower

I. Project Definition

The Town of Farmington is seeking proposals to construct a communication tower and support building, to be deeded to the Town for no cost, on property owned by the Town known as lots 319-321 New Britain Avenue, Unionville, Ct. This tower should have a height not to exceed 200 ft. and designed as a self-supporting, Pirol (or equal) lattice tower. The design should accommodate the Town's communication equipment as well as three wireless telecommunication service providers.

The successful applicant shall be responsible for all facets of pre-construction and post-construction, including all costs and test borings. The successful vendor shall act as a co-applicant with the Town of Farmington with regard to submissions to the Town Plan and Zoning Commission.

The successful applicant will provide all maintenance and support resources, following the construction of the tower, for a period of not less than 20 years.

II. Matters To Be Included In The Proposal

Interested parties shall include information concerning the following issues in their proposal:

- A. Project Timeline -- The proposal must include a project timeline outlining specific dates for the beginning and end of the construction period.
- B. Rent -- The proposal must include information concerning the proposer's rental payments, as well as any sharing of co-tenant rental income.
- C. Terms of the agreement - The proposal must include a description of the length of the initial agreement, including any extensions. The term of the agreement should cover a period of not less than 20 years.
- D. Use -- The proposal should include all terms regarding the use, maintenance and operation of the tower and support building, including use by co-tenants.

F. Insurance and Indemnification – The proposal should include language allowing for the procurement and maintenance of an insurance policy as dictated herein. The proposal must also include indemnification and hold harmless language in favor of the Town of Farmington and list the Town of Farmington as "Additional Insured".

1. The Contractor shall be responsible for maintaining insurance, coverage in force for the life of this Contract, and in addition, until the expiration of the guarantee period, of the kinds and in the adequate amounts to secure all of his obligations under the Contract; and with insurance companies licensed to write such insurance in the State of Connecticut. The kinds and amounts of such insurance carried shall not be less than that stipulated herein, and the Contractor agrees that the stipulation of the kinds and minimum amounts of insurance coverage, or the acceptance by the Owner of certificates indicating the kinds and limits of coverage, shall in no way limit the liability of the Contractor to any such kinds and amounts of insurance coverage. All policies issued shall indemnify and save harmless the Owner, the Engineer, their agents, and employees from any claims for damages arising out of this Contract to either persons or property.

The following "Indemnity Agreement" shall apply and must be stated on contractor's "Certificate of Insurance".

"Contractor will indemnify and hold owner harmless against any and all claims, damages, losses, costs, penalties, expenses and compensation arising out of injuries and damages sustained by or alleged to have been sustained by, any person or persons or any property, real or personal, which is or is alleged to be, occasioned in whole or in part by the acts or omissions of contractor, material suppliers or anyone directly or indirectly employed by them or any of them while engaged in the performance of their work".

Contractor shall furnish insurance certificates endorsed as noted: Town of Farmington as "Additional Insured". Certificates of Contractors Insurance Company Form shall be submitted to the owner in the Bid Proposal.

2. Upon award of Bid, CONTRACTOR shall submit Certificate of Insurance as required. Town of Farmington, Connecticut shall be named as "Additional Insured" on all certificates.
3. The Town may request the Contractor to submit copies of the required insurance policies for further review if necessary. The Town of Farmington may, in writing, notify the Contractor of any disapproval of any such policies, and satisfactory policies shall be provided in place of those disapproved. The Contractor shall require its subcontractors to obtain policies of similar insurance before each commences work. The Contractor shall furnish the Owner with Certificates of Insurance for all policies held by his Subcontractors in conjunction with this project. All such insurance shall be carried with financially responsible insurance companies, kept in force throughout the guarantee period. Certificates of insurance, covering all operations under this Contract, which expire before the Contractor's work is accepted by the Town of Farmington shall be renewed and submitted to the Town of Farmington for its approval. All subcontractors Certificate of Insurance shall list the Town of Farmington as "Additionally Insured".
4. It is expressly understood that the Contractor shall maintain all insurance policies required herein in force until the completion of the project and final acceptance by the Owner. He alone shall be responsible for renewing all policies as they may expire and providing the Owner with Certificates of Insurance for and copies of all policies current and in force. If the Contractor fails to provide insurance as required herein or fails to provide the owner evidence of such insurance in the form of Certificates of Insurance for and copies of all policies and renewals thereof, the Owner may, without notice being given, order the Contractor to suspend work on all or portions of the project until such time as the Contractor provides evidence of insurance satisfactory to the Owner. This right to suspend work shall be in addition to any other rights afforded the Owner under the terms of this Contract. Any such suspension of work ordered by the Owner because of a failure by the Contractor to provide the required insurance or to provide the Owner evidence of such insurance shall not entitle the Contractor to an extension of the Contract Time or an increase of the Contract Price and a Change Order shall not be issued.
5. Insurance:
Insurance shall be written for not less than any limits of liability required by law or those set forth below,

whichever is greater. If your limits are not equal to the following, please submit your limits with the bid proposal for our review.

a) Workers' Compensation - Statutory
Employers Liability - \$100,000/500,000/100,000

b) Commercial General Liability
Bodily and Personal Liability & Property Damage
\$1,000,000 Per Occurrence
\$2,000,000 Annual Aggregate
Products and Completed Operation hazard must be included

c) Comprehensive Auto Liability
Including Coverage of Owned, Non-Owned, & Rented Vehicles
\$1,000,000 Per Occurrence

d) Excess Liability
\$1,000,000 Minimum

The insurance shall be placed with such company as may be acceptable to the Owner. The policy shall be submitted to the Owner for examination and satisfactory certificates of said insurance shall be submitted with contractor's bid to the Owner. The Contractor will be charged with the responsibility for similar Public Liability protection for all his subcontract operations, and in the event that the Contractor's policy does not cover every subcontractor, certificate of insurance issued on policies by companies that may be acceptable to the Owner covering each and every subcontractor shall be filed with the Owner prior to commencement of such subcontract operations.

a) The Contractor shall require similar insurance in such amounts to be taken out and maintained by each subcontractor, each certificate of insurance shall name the Owner as Additional Insured.

(Other Insurance Requirements:

1. In the event the form of any policy or certificate or the amount of the insurance or the companies writing same are not satisfactory to the Owner, the Contractor shall secure other policies or certificates in the form, in the amount and/or with companies satisfactory to the Owner.
2. The Contractor shall not cause policies to be canceled or permit them to lapse. All insurance policies shall include a clause to the effect that the policy shall not be subject to cancellation or a reduction in the required limits of liability, or amount of insurance until notice has been sent, by registered mail, to the Owner stating when not less than fifteen (15) days thereafter, such cancellation or reduction shall be effective.
3. All certificates of insurance shall contain true transcripts from the policy authenticated by the proper office of the insurer evidencing in particular those insured, the extent of the insurance applies, the expiration date, and the above mentioned notice of cancellation clause.
4. Equal insurance shall be provided by any and all subcontractors of the work, regardless of the value of the work, unless otherwise modified in writing by the Owner.
5. All insurance specified in this Contract shall be provided by the Contractor and all subcontractors at no additional expense to the Owner.
6. The Contractor shall require that the insurance company(ies) from whom policies shall be acquired shall have reviewed all of the requirements for insurance as set forth in this document prior to execution of the Contract and he shall submit, with his Bid, a Certificate of CONTRACTORS Insurance Company executed by the insurance companies asserting that the policy(ies) provided comply with all of the requirements set forth in this document.

INDEMNITY OF THE TOWN BY CONTRACTOR:

The Contractor shall, at all times, indemnify and save harmless the Owner, the Engineer, and their employees, officers, and agents against any and all damages to property or injuries to or death of any person or persons, including property and employees or agents of the Owner and the Engineer, and shall defend, indemnify and save harmless the Owner and the Engineer from any and all claims, demands, suits, actions or proceedings of any kind or whosoever in any way resulting from or arising out of operations on connections herewith, including operations of subcontractors and acts or omissions of employees or agents of the Contractor or his subcontractors.

Insurance coverage specified elsewhere herein and in any special conditions constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of the Contractor under the terms of the contract. The Contractor shall procure and maintain at his own cost and expense, any additional kinds and amounts of insurance, which in his own judgment, may be necessary for his proper protection in the prosecution of the work. The Contractor agrees to well and truly save and indemnify and keep harmless, the Owner and the Engineer, against all liability, judgments, costs and expenses which may in any way come against the Owner and/or the Engineer, or which may in any way result from carelessness, omission or neglect of the Contractor resulting from the operation in connection herewith, including all liability to the Owner resulting from failure to erect or maintain sufficient railing or fence as required by Section 138-149, Connecticut General Statutes. Any additional cost of this save harmless insurance coverage shall be included in the price of the Contract.

The Town of Farmington requires a 100% Labor/Material Bond and a 100% Performance Bond for this project.

F. Dismantling - The proposal should include language regarding the parties' responsibilities with regard to dismantling the tower, if such need should arise during the terms of the agreement.

G. References - The proposal must include at least three references related to construction of similar towers, in the Connecticut or New England area, within the last five years. References will include a name, address and telephone number of a contact person.

The Town of Farmington reserves the right to accept or reject any or all proposals or parts thereof for any reason, to negotiate changes to proposal terms, to waive minor inconsistencies with the RFP and to negotiate a contract with the successful firm.

ALL ADDENDA WILL BE POSTED TO THE TOWNS E-MAIL ADDRESS AND THE STATE OF CONNECTICUT BID SITE. HOWEVER, IT IS THE RESPONSIBILITY OF THE VENDOR TO CHECK FOR ANY ADDENDA ADDED TO THE RFP A MINIMUM OF FORTY EIGHT HOURS IN ADVANCE OF THE DEADLINE.

Eight copies of the RFP shall be sent to:

Lynne P. Celentano, Purchasing and Insurance Coordinator
Town of Farmington
1 Montcith Drive
Farmington, CT 06032-1053

RFP - Communication Tower

ADDENDUM #1

RFP COMMUNICATION TOWER CONSTRUCTION PROJECT POLICE FACILITY/COMMUNITY CENTER TOWN OF FARMINGTON

DATE: November 20, 2000

A pre-bid conference was held at 9:00AM on November 20, 2000, in the Town Council Chambers of Town Hall and at the site. **NOTE: RFP SUBMITTAL HAS BEEN EXTENDED TO 3:00PM, FRIDAY, DECEMBER 15, 2000.** The following are additional corrections to RFP:

- 1) Town will be a co-applicant. Proposal will require going through ZBA and TPZ. Town staff will support the application.
- 2) Communication tower contractor and/or carrier will coordinate construction schedule and activities with the general contractor.
- 3) In regards to town antenna height and Town of Farmington portion – see attached antenna specifications.
- 4) Design of tower carrier placement up to vendor – not limited to three, but needs of Town of Farmington must be met first.
- 5) Painting of lattice tower – to be determined by ZBA and TPZ.
- 6) Attached please find a DRAFT preliminary site plan drawing. In regards to support building the size on the drawing is incorrect. The correct dimensions are 90' x 30'. Support building to be built by tower contractor and to be divided as follows: There will be 4 secure spaces each 15' x 25' deep with single entrance doors. The last section of 30' x 25' will have 1 single entrance door (for future use) and a standard overhead garage door.
- 7) Generator power will service the Support Building and will support all carriers.
- 8) Specification on brick attached (to match Police Facility and Community Center). Roof will be asphalt shingle and ridge will run length of building.
- 9) Footprint sitework will be the responsibility of the tower contractor. Site would be prepped by tower contractor to correspond with flood elevation requirements.

- 10) Latitude/Longitude coordinates are not available from the Town of Farmington as site location is approximate until finalized. They are the responsibility of the tower contractor.
- 11) Test Point Data – See attached for general boring information and specifics of the two closest locations.
- 12) Town of Farmington requires a 2 hour rated block firewall with roof assembly separating the 30' section from the multiple 15' sections.
- 13) Building shall be built to all Federal, State and Town of Farmington regulations and carrier requirements.
- 14) Flood line is not staked.
- 15) RFP SUBMITTAL HAS BEEN EXTENDED TO 3:00PM FRIDAY, DECEMBER 15, 2000.
- 16) Attached are copies of the sign in sheet at the pre-bid conference meeting on 11/20/00 and also a copy of the vendor list of firms who have obtained copies of the RFP prior to the 11/20/00 pre-bid conference.

Any technical questions shall be directed to Captain Jeffrey Yates at 860-675-2400.

Lynne P. Celentano
Purchasing & Insurance Coordinator
Town of Farmington
1 Monteith Drive
Farmington, CT 06032-1053
860-675-2355
860-673-8233 fax
CelentanoL@Farmington-CT.org

TOWN HALL
 1 MONTEITH DRIVE
 FARMINGTON, CONNECTICUT 06032-1053
 INFORMATION (860) 675-2300
 FAX (860) 675-7140
 "TOWN TALK" (860) 675-2301

THE TOWN OF FARMINGTON



INCORPORATED 1645

January 19, 2001

VIA FACSIMILE AND REGULAR MAIL

Mr. J. Wayne Medlin
 Sprint Spectrum, LP
 One International Blvd.
 3rd Floor
 Mahwah, New Jersey 07495

RE: CELL TOWER PROPOSAL TO TOWN OF FARMINGTON

Dear Mr. Medlin:

This letter is to formally notify you that your proposal is one of those being given final consideration by the Town of Farmington.

At this point, we have considered all information provided to us including that by phone, fax, and mail since your initial proposal of December 15th. We now expect that three major carriers will occupy the tower, in addition to the Town's equipment and perhaps three regional carriers. Do you agree with this loading and to what extent are you willing to commit? We have also concluded that ownership of the tower, (as well as the support building) should be turned over to the Town upon completion of construction. Management and maintenance issues will then be handled by agreement with the builder of the facility. Since the proposed location is in a flood zone, would flood insurance be required and if so would you be willing to pay for it?

There are a few issues in need of clarification. First, would your proposal allow for the Town to occupy the small equipment room in the support building closest to the tower since its antennae(s) will apparently be located at the top of the tower? Is the tower built to accommodate loading requirements for six carriers in addition to Town equipment? While you are installing underground conduits would you be willing to install the same for the Town connecting the support building to the Police Department's communication equipment room?—If there would be cost to the Town, how much? Please confirm that you will provide and install Town antennas, mounting brackets, coax, etc. on the tower at no cost to the Town. (See enclosure by Jeffrey A. York for these two points of information). Finally, what is your position concerning dismantling of the tower in the future should it become necessary?

We are assuming that in accordance with your January 9th (copy enclosed) supplement to the proposal, the Town would receive all revenue from the second and all subsequent carriers. Please confirm this and suggest a mechanism and the cost of same for management and maintenance issues. As stated earlier the Town would like the tower builder to be responsible for these issues.

Please consider the contents of this letter as supplemental to the Town's RFP; and advise of any issues you may have with it. We would ask you to respond with your final best proposal by February 1, 2001. We will select from these final proposals without further negotiations; and

AN EQUAL OPPORTUNITY EMPLOYER



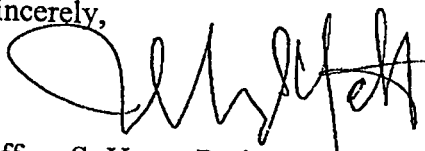
prepare an agreement for review and approval by the Farmington Town Council. The Town will propose the inclusion of the following provisions, some of which may already be in your standard lease, in the agreement:

1. Voluntary termination:
 - No termination for first five (5) years.
 - Thereafter, six (6) months notice or an equivalent termination fee.
2. No Town representations except due authorization.
3. Non-refundable security deposit, due on lease execution; and credit to rent upon completion of the facility.
4. Bond/security to insure completion of facility.
5. Town consent required for assignments, subleases and facility modifications, not unreasonably withheld, conditioned or delayed.
6. Tenant default provisions:
 - All "rents" due within ten (10) days, without necessity of notice.
 - Any uncured default permits Landlord termination and acceleration of payment of "rent" for the balance of then term.
 - Indemnity from subtenant claims.
7. All lease provisions must protect Town's ownership of the Tower, the Town's facilities and their continued operation.
8. Timetable for commitment of all carriers with a provision for base rent by an agreed amount until realized.
9. Definition of Sublease rents—should include "value" of services or sharings, if any, which are in lieu of or effectively reduce the subtenants rent (therefore the Town's share).
10. Confirmation of deadline for approvals, "other" due diligence required dates and start/completion dates for construction

We have applied for zoning approval and are planning for a public hearing in February.

Thanks for your interest in this project; I'll look forward to your reply.

Sincerely,



Jeffrey S. Yates, Project Coordinator
Town of Farmington

JSY:clg

cc: Kathleen Eagen, Acting Town Manager
Lynne Celentano, Purchasing & Insurance Co-ordinator
Jeffrey Ollendorf, Planning Director
Michael Whalen, Chief of Police

Robert O'Connor, NBC

THE TOWN OF FARMINGTON

TOWN HALL

1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 06032-11

INFORMATION (860) 675-2300
FAX (860) 675-7140
"TOWN TALK" (860) 675-2301

INCORPORATED 1645



February 5, 2001

Mr. J. Wayne Medlin
Sprint Spectrum, LP
One International Blvd.
3rd Floor
Mahwah, New Jersey 07495

RE: CELL TOWER PROPOSAL TO TOWN OF FARMINGTON

Dear Mr. Medlin:

We are pleased to inform you that the Town of Farmington has selected Sprint to partner with us in building a tower facility at 319 New Britain Avenue, Unionville. We would be pleased to meet with you and/or Mr. Rob O'Connor at your earliest convenience to work out final details and prepare for the public hearing required by our zoning regulations, tentatively scheduled for March 12, 2001.

I will look forward to receiving the proposed lease (February 9th will be fine), after which it will be reviewed by the Town's Attorney—Kenneth J. Pocius, Carmody & Torrance LLP, P.O. Box 1110, Waterbury, CT 06721-1110, Telephone 203-575-2631, FAX 203-575-2600.

Thank you for your interest in this project; we look forward to working with you.

Sincerely,

Jeffrey S. Yates, Project Coordinator
Town of Farmington

JSY:clg

Cc: Kathleen Eagen, Acting Town Manager
Lynne Celentano, Purchasing & Insurance Co-ordinator
Jeffrey Ollendorf, Planning Director
Michael Whalen, Chief of Police
Robert O'Conner, NBC
Atty. Kenneth Pocius

This Lease is entered into this ____ day of _____, 2001, by and between Sprint Spectrum, L.P., a Delaware limited partnership ("TENANT"), having its principal place of business at Crossroads Corporate Center 1 International Boulevard, Suite 800, Mahwah, NJ 07495, and the Town of Farmington, a Connecticut municipal corporation ("LANDLORD"), having its principal place of business at 1 Monteith Drive, Farmington, CT 06032-1053.

1. The Property. LANDLORD is the owner of a certain parcel of real property (the "Property") located at 319-321 New Britain Avenue, Unionville, Connecticut; said property being the same as that known as the Assessor's Parcel No. 1-13-19.

2. Premises and Use. LANDLORD leases to TENANT the site described below:

- Equipment shelter space for the location of base station equipment consisting of approximately 375 square feet within the concrete block equipment shelter to be constructed by TENANT on behalf of LANDLORD;
- Tower antenna space between the 167 and 173 foot levels on the 190 foot lattice-style tower (the "Tower") to be constructed by TENANT on behalf of LANDLORD;
- Temporary space, during the construction of the Facility (as defined below), of real property consisting of approximately 27,000 square feet of land;
- Space required for cable runs to connect equipment and antennas, in the location(s) approved by LANDLORD and shown on Exhibit A, together with a non-exclusive easement for reasonable access thereto and to the appropriate, in the discretion of TENANT, source of electric and telephone facilities (collectively, the "Site"). The Site will be used by TENANT for the purpose of constructing a telecommunications tower, equipment building and related improvements (the "Facility") and for the purpose of installing, removing, replacing, modifying, maintaining and operating, at its expense, cellular/wireless communications equipment on and in the Facility (the "PCS"), including, without limitation, antenna equipment, cable wiring, back-up power sources (including generators and fuel storage tanks), and related fixtures, all as more particularly described on Exhibit B attached hereto. LANDLORD and TENANT hereby agree that the Site, including any non-exclusive easement area (defined herein), will be surveyed before the Commencement Date by a licensed surveyor at the sole cost of TENANT, and such survey shall then supplement Exhibit A, and become a part hereof and shall control to describe the Site and non-exclusive easement area in the event of any discrepancy between such survey and the description of the boundary of the Site contained herein. TENANT will use the Site in a manner which will not unreasonably disturb the occupancy of LANDLORD's other tenants. TENANT will have access to the Site twenty-four (24) hours per day, seven (7) days per week.

3. Term. The term of this Agreement (the "Initial Term") is five (5) years, commencing on that date ("Commencement Date") which is the earlier of (a) 30 days after the issuance of a building permit for the Facility and the PCS, or (b) October 1, 2001; provided, however, that if as of October 1, 2001, TENANT has pending governmental permit applications for the Facility and the PCS or a pending appeal of a governmental authority decision relative to the Facility or the PCS, then the Commencement Date shall be extended until that date which is 30 days after such pending applications are favorably decided (with no appeal thereof) and such appeal is favorably decided or favorably resolved. This Agreement will be automatically renewed for three additional terms of five years each, and then one additional term of four years (each, a "Renewal Term"), unless TENANT provides LANDLORD notice of intention not to renew not less than 90 days prior to the expiration of the Initial Term or any Renewal Term.

4. Rent. Beginning on the Commencement Date, rent will be paid in equal monthly installments of \$1,060.00 and on the first (1st) day of each calendar month thereafter (until increased as set forth herein), partial months to be pro rated, in advance. The rent due hereunder will be increased on each anniversary of the Commencement Date by an amount equal to three percent (3%) of the rent in effect for the immediately preceding year. Any rent payment not made within fifteen (15) days of its due date shall require a late payment penalty of five percent (5%) of the amount of such payment.

5. Title and Quiet Possession. LANDLORD represents and agrees (a) that it is the owner of the Site; (b) that it has the right to enter into this Agreement; (c) that the person signing this Agreement has the authority to sign; (d) that TENANT is entitled to access to the Site at all times and to the quiet possession of the Site throughout the Initial Term and each Renewal Term so long as TENANT is not in default beyond the expiration of any cure period; and (e) that LANDLORD will not have unsupervised access to the TENANT'S antennas, conduits, base station and related equipment at the Facility.

6. Assignment/Subletting. TENANT shall not assign or transfer its right under this Agreement or sublet all of the Site without notice to or the written consent of LANDLORD, which consent shall not be unreasonably withheld, conditioned or delayed; provided, however, that TENANT assign or transfer its rights under this Agreement to an Affiliate without notice to or the prior written consent of LANDLORD if such assignee agrees to be bound by the terms and conditions of this Agreement. The following definitions shall have the following meanings for purposes of this Section of Agreement:

"Affiliate" shall mean any subsidiary, affiliate or successor legal entity, or party controlling, controlled by, or under common control with TENANT, or party which acquires substantially all of the assets of TENANT.

7. Improvements. (a) Within 10 days after the Commencement Date, TENANT or its independent contractor shall, at TENANT'S expense, commence construction of the Facility and the PCS in accordance with plans and specifications attached hereto as Exhibits A and B, which plans hereby are approved by LANDLORD. Absent force majeure or interference from LANDLORD'S other construction projects on the Property, construction of the Facility shall be completed within 80 days of commencement of the Facility. TENANT shall obtain the written consent of LANDLORD prior to making modifications necessary to accommodate the Facility or the PCS that are shown on Exhibit B, excluding such ordinary replacements and repairs that TENANT deems necessary from time to time for the operation of the Facility, which consent shall not be unreasonably delayed, withheld or conditioned. TENANT shall have obtained all necessary governmental approvals and permits prior to commencing construction. All of TENANT'S contractors and subcontractors shall be duly licensed in the State of Connecticut. Upon termination or expiration of this Agreement, TENANT will remove the Facility from the Facility. LANDLORD'S representatives may inspect the Site during the course of construction of the Facility, provided such inspection does not interfere with the progress of such construction.

(b) Notwithstanding anything to the contrary contained in this Agreement, upon the completion of construction of the Facility by TENANT'S independent contractor, including installation of Landlord's Equipment, subject to a inspection and acceptance by LANDLORD, which inspection shall be completed within ten (10) days of TENANT'S notice to LANDLORD of completion of work, and the written acknowledgement of the inspection and acceptance of the Facility by TENANT, TENANT shall transfer lien free ownership of the Facility (excluding the PCS) to LANDLORD and LANDLORD and TENANT shall execute the Bill of Sale attached to this Agreement as Exhibit C. Any unreasonable deficiencies disclosed by LANDLORD'S inspection of the Facility shall be promptly corrected by TENANT or TENANT'S independent contractor, as a condition to LANDLORD'S acceptance of the Facility work.

(c) TENANT and LANDLORD will cooperate with each other regarding multiple construction projects on the Property so as to avoid interference with each other.

(d) TENANT shall require a warranty of workmanship and materials from TENANT'S independent general contractor for the Facility and manufacturer of the Tower. Such general contractor's warranty shall commence no earlier than the final completion (as defined in the construction contract) of the Facility construction and shall be for at least a period of (1) year from that date. Such manufacturer's warranty shall commence no earlier than the purchase of the Tower and shall be for at least a period of (10) years from such date. Both warranties shall be in writing and shall be given to TENANT'S option, either be given directly to the LANDLORD or be assigned to LANDLORD with the written consent of the general contractor or manufacturer, as the case may be.

8. Notices. All notices must be in writing and are effective only when deposited in the U.S. mail, certified and postage prepaid, or when sent via overnight delivery. Notices to SLP are to be sent to Sprint PCS, Crossroads Corporate Center, Suite 800, One International Boulevard, Mahwah, NJ 07495, Attention: Lease Management, with a copy to Sprint Law Department, 6391 Sprint Parkway, Mailstop KSOPHT0101Z2020, Overland Park, Kansas 66251-2020, Attention: Sprint PCS Real Estate Attorney. Notices to Owner must be sent to the address shown underneath Owner's signature.

9. Compliance with Laws. TENANT will substantially comply with applicable laws relating to its possession and use of the Site and construction of the Facility. TENANT will use diligent efforts to obtain all necessary permits and approvals to install the Facility and the PCS. As used herein, the term "diligent efforts" shall not require TENANT appeal any denial of a permit application.

10. Interference. TENANT will resolve technical interference problems with other equipment located on the Property on the Commencement Date.

equipment that becomes attached to the Property at any future date when TENANT desires to add additional equipment to the Site; provided, however, that TENANT shall be deemed the first user of the Facility, notwithstanding the actual date of installation of TENANT's installation of the PCS, so long as TENANT operates the PCS within its assigned frequencies and in compliance with all applicable Federal Communications Commission rules and regulations. Likewise, LANDLORD will not permit or suffer the installation of any future equipment which (a) results in technical interference problems with TENANT's then-existing equipment or (b) encroaches onto the Site. LANDLORD will not grant a lease or license to any party for use of the Property, nor permit any material modification of the use of the Property by any existing tenant or licensee, if such new use or modification will interfere with TENANT's operation of the PCS or diminish TENANT's signal quality for the area serviced by the Site. TENANT shall not be required to modify the PCS to prevent interference with any new cellular/wireless communications use of the Property so long as TENANT operates the PCS within its assigned frequencies and in compliance with all applicable Federal Communications Commission rules and regulations.

11. Utilities. TENANT will pay for all utilities used by it at the Site. LANDLORD will cooperate with TENANT in TENANT's efforts to obtain utilities from any location provided by LANDLORD or the servicing utility, including signing any easement required by the utility company.

12. Taxes. As the Site is town-owned property, no property taxes are paid thereon. If, however, LANDLORD places an assessed value on the TENANT's antennas, conduits, base station equipment and related equipment at the Facility, TENANT will pay any such reasonable tax assessment to LANDLORD.

13. Termination. TENANT may terminate this Agreement at any time by notice to LANDLORD without further liability (a) if TENANT, after using diligent efforts, does not obtain all permits or other approvals (collectively, "approval") required from any governmental authority or any easements required from any third party to operate the PCS system, or (b) if any such approval is canceled, or is withdrawn or terminated, beyond TENANT's reasonable control, or (c) if LANDLORD fails to have proper ownership of the Site or authority to enter into this Agreement, or (d) if TENANT, for any other reason, in its sole discretion, elects to terminate this Agreement, provided that the TENANT is not then in material default under this Agreement. Upon termination, all prepaid rent will be retained by LANDLORD unless such termination is due to LANDLORD's failure of proper ownership or authority, or such termination is a result of LANDLORD's default. Notwithstanding anything in this Agreement to the contrary, TENANT shall not terminate this Agreement pursuant to clause (d), above, for the period after the Commencement Date through the expiration of the Initial Term. Notwithstanding anything in this Agreement to the contrary, TENANT shall not terminate this Agreement pursuant to clause (d), above, during any Renewal Term unless TENANT gives LANDLORD six (6) months' prior written notice of such termination or unless TENANT pays LANDLORD a termination fee equal to six (6) times the then applicable monthly rent hereunder.

14. Default. If either party is in default under this Agreement for a period of (a) 15 days following receipt of notice from the non-defaulting party with respect to a default which may be cured solely by the payment of money, or (b) 30 days following receipt of notice from the non-defaulting party with respect to a default which may not be cured solely by the payment of money after completion of the construction of the Facility, or (c) 15 days following receipt of notice from the non-defaulting party with respect to a default which may not be cured solely by the payment of money before completion of the construction of the Facility, then, in either event, the non-defaulting party may pursue any remedies available to it against the defaulting party under applicable law, including, but not limited to, the right to terminate this Agreement. If the non-monetary default may not reasonably be cured within the applicable cure period, this Agreement may not be terminated if the defaulting party commences action to cure the default within such applicable cure period and proceeds with due diligence to fully cure the default.

15. Indemnity and Insurance. (a) TENANT will indemnify LANDLORD against and hold LANDLORD harmless from any and all claims, damages, losses, costs, penalties, expenses and compensation arising out of injuries and damages sustained by or alleged to have been sustained by, any person or persons or any property, real or personal, which is or is alleged to be occasioned in whole or in part by the acts or omissions of TENANT, or TENANT's agents, employees or independent contractors. The TENANT shall, at all times, indemnify and save harmless the LANDLORD and LANDLORD's employees, officers, and agents against any and all damages to property or injuries to or death of any person or persons, including property and employees or agents of the LANDLORD, and shall defend, indemnify and save harmless the LANDLORD from any and all claims, demands, suits, actions or proceedings of any kind or whomsoever in any way resulting from or arising out of operations in connection herewith, including operations of

TENANT's agents, employees or independent contractors. LANDLORD will indemnify TENANT against and hold TENANT harmless from any and all claims, damages, losses, costs, penalties, expenses and compensation arising out of injuries and damages sustained by or alleged to have been sustained by, any person or persons or any property, real or personal, which is or is alleged to be occasioned in whole or in part by the negligent intentional acts or omissions of LANDLORD, or LANDLORD's agents, employees or independent contractors.

(b) TENANT will procure and maintain a public liability policy, with a certificate of insurance to be furnished to LANDLORD within 30 days of written request. Insurance shall be written for the greater of any limits of liability required by law or the following: (A) Worker's Compensation, statutory limits, Employers Liability, \$100,000/\$500,000/\$100,000; (B) Commercial General Liability including bodily and personal liability and property damage \$1,000,000 per occurrence, \$2,000,000 in annual aggregate, including products and completed operation hazard; (C) Comprehensive Auto Liability including coverage of owned, non-owned and rented vehicles at \$1,000 per occurrence, (D) Excess Liability at \$1,000,000 and (E) Builder's Risk. TENANT agrees (i) to obtain such insurance policy from an insurance company licensed to write such insurance in the State of Connecticut, and that such policy will name LANDLORD as an additional insured. TENANT shall not cause policies to be canceled or permit them to lapse. All insurance policies shall include a clause to the effect that the policy shall not be subject to cancellation or a reduction in the required limits of liability, or amount of insurance until notice has been sent, by registered mail, to LANDLORD stating when not less than 15 days thereafter, such cancellation or reduction shall be effective. All certificates of insurance shall contain true transcripts from the policy authenticated by the proper officer of the insurer evidencing particular those insured, the extent of the insurance, the expiration date, the above mentioned notice of cancellation clause. Equal insurance shall be provided by any and all of TENANT's contractors, regardless of the value of the work, unless otherwise modified in writing by LANDLORD. All insurance specified in the Agreement shall be provided by the TENANT and TENANT's contractors at no additional expense to the LANDLORD. Each party hereby waives its right of recovery against the other for any loss or damage covered by any insurance policies maintained by the waiving party. Each party will cause each insurance policy obtained by it to provide that the insurance company waives all rights of recovery against the other party in connection with any damage covered by such policy.

(c) The TENANT shall require its contractors to obtain policies of insurance before each commences work. The TENANT shall furnish LANDLORD with Certificates of Insurance for all policies held by TENANT's contractors in conjunction with the construction. All contractors' Certificate of Insurance shall list the LANDLORD as an additional insured.

(d) Prior to the commencement of construction of the Facility, TENANT shall provide LANDLORD with performance, labor and materials bonds issued by an insurance or surety company in favor of LANDLORD in the amount of the estimated cost of construction of the Facility and in form and substance reasonably satisfactory to the LANDLORD.

16. Hazardous Substances. LANDLORD hereby indemnifies TENANT against and holds TENANT harmless from any and all costs (including reasonable attorneys' fees) and claims of liability or loss which arise out of the presence of any substance, chemical or waste, oil or hazardous material (collectively, "Hazardous Substance") that is identified as hazardous, toxic or dangerous under any applicable federal, state or local law or regulation on or migrating from the Site or any adjacent real estate owned by the LANDLORD (collectively, "Premises") at any time, other than those Hazardous Substances which are first released by TENANT upon the Premises. TENANT will not introduce or use any Hazardous Substance on the Site in violation of any applicable laws and regulations. TENANT will assess and remediate (if necessary) in compliance with applicable laws and hereby indemnifies LANDLORD and holds LANDLORD harmless from any and all costs (including reasonable attorneys' fees) and claims of liability or loss which arise out of the release of any Hazardous Substance by TENANT upon the Premises. Upon obtaining knowledge of the release or threat of release of any Hazardous Substance on the Premises, TENANT and the LANDLORD shall each have the right to notify the applicable regulatory authorities thereof without the prior consent of the other party (with simultaneous notice to the other party) and to provide reasonable access to the Site to the employees, agents, and contractors of such agencies and to other persons conducting response actions in accordance with applicable laws. The foregoing indemnifications shall survive any termination of this Agreement and shall be in addition to any other rights which LANDLORD or TENANT may have under applicable law.

17. Maintenance. LANDLORD will be responsible for repairing and maintaining the Facility (excluding the TENANT's PCS equipment that is not in proper operating and reasonably safe condition; provided, however, that such repair or maintenance is required due to the acts of TENANT, its

or employees, TENANT shall reimburse LANDLORD for the reasonable costs incurred by LANDLORD to restore the damage to the condition which existed immediately prior thereto. LANDLORD shall maintain and repair in proper operating and reasonably safe condition those other portions of the Property used in conjunction with the access to or operation of the Site, or affecting such access or operation. TENANT will be responsible for repairing and maintaining the PCS in reasonably safe condition; provided, however if any such repair or maintenance is required due to the acts of LANDLORD, its agents or employees, LANDLORD shall reimburse TENANT for the reasonable costs incurred by TENANT to restore the PCS to the condition which existed immediately prior thereto.

18. Landlord's Equipment. (a) TENANT shall install certain of the LANDLORD'S radio equipment more particularly described in Exhibit E attached hereto (hereinafter referred to as the "LANDLORD'S Equipment") on the Facility at TENANT's sole cost and expense, provided the LANDLORD's Equipment is purchased and delivered to the Site at LANDLORD's sole cost prior to commencement of Tower construction. LANDLORD agrees to hold TENANT free and harmless from any damage to the LANDLORD's Equipment resulting from said installation, provided TENANT exercises reasonable care in executing same. In no event shall the LANDLORD's Equipment interfere with the installation and operation of TENANT's antennas at the 170 foot centerline level of the Tower.

(b) LANDLORD shall be responsible for all costs associated with the operation, maintenance and repair of the LANDLORD's Equipment. LANDLORD will have a meter installed on the Site for LANDLORD's utility use, and the cost of such meter and of the installation, maintenance and repair thereof shall be paid for by LANDLORD. All utility costs attributable to the LANDLORD's Equipment shall be paid by LANDLORD.

(c) LANDLORD shall not permit the use of the LANDLORD's Equipment to limit, impair or restrict the use or operations of the PCS by TENANT, nor shall LANDLORD permit the use of the LANDLORD's Equipment to cause any destructive or conflicting interference with the PCS. If any harmful interference with the PCS results from the operation of LANDLORD's Equipment, then LANDLORD shall immediately cause any and all operation of the LANDLORD's Equipment to cease until LANDLORD has eliminated such interference.

19. Miscellaneous. (a) This Agreement applies to and binds the heirs, successors, executors, administrators and assigns of the parties to this Agreement; (b) This Agreement is governed by the laws of the State of Connecticut; (c) If requested by TENANT, LANDLORD agrees promptly to execute and deliver to TENANT a recordable Memorandum of Agreement in the form of Exhibit D; (d) This Agreement (including the Exhibits) constitutes the entire agreement between the parties and supersedes all prior written and verbal agreements, representations, promises or understandings between the parties. Any amendments to this Agreement must be in writing and executed by both parties; (e) If any provision of this Agreement is invalid or unenforceable with respect to any party, the remainder of this Agreement or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, will not be affected and each provision of this Agreement will be valid and enforceable to the fullest extent permitted by law; and (f) The prevailing party in any action or proceeding in court or mutually agreed upon arbitration proceeding to enforce the terms of this Agreement is entitled to receive its reasonable attorneys' fees and other reasonable enforcement costs and expenses from the non-prevailing party.

20. Non-Binding Until Fully Executed. This Agreement is for discussion purposes only and does not constitute a formal offer by either party. This Agreement is not and shall not be binding on either party until and unless it is fully executed by both parties.

The following Exhibits are attached to and made a part of this Agreement: Exhibit A, B, C & D.

21. Siting Council Disclosure. LANDLORD acknowledges that pursuant to Connecticut General Statutes Chapter 277A, §16-50g (et. seq.) and the regulations promulgated thereunder, the Connecticut Siting Council (the "Council") has jurisdiction regarding the location of certain telecommunications facilities.

LANDLORD:

Town of Farmington, a Connecticut municipal corporation

By: Town of Farmington
Name: Kathleen A. Eagen
Its: Town Manager
Address: 1 Monteith Drive, Farmington, CT 06032-1053
Date: 4-27-01

TENANT:

Sprint Spectrum L.P., a Delaware limited partnership

By: Michael W. Loucy
Name: Michael W. Loucy
Its: Director of Site Development - Northeast Region
Address: 1 International Boulevard, Suite 800,
Mailstop: NJMAHA0101, Mahwah, NJ 07495
Date: 5/18/01

EXHIBIT A

Site situated in the Town of Farmington, County of Hartford, State of Connecticut, known commonly as 319-321 New Britain Avenue commonly described as follows:

Legal Description:

A PORTION OF THE PREMISES DESCRIBED IN THAT CERTAIN WARRANTY DEED RECORDED IN THE FARMINGTON LAND RECORDS OFFICE IN VOLUME 571 AT PAGE 159.

Sketch of Site:

SEE PLAN/DRAWING L-1 ATTACHED HERETO AND INCORPORATED HEREIN.

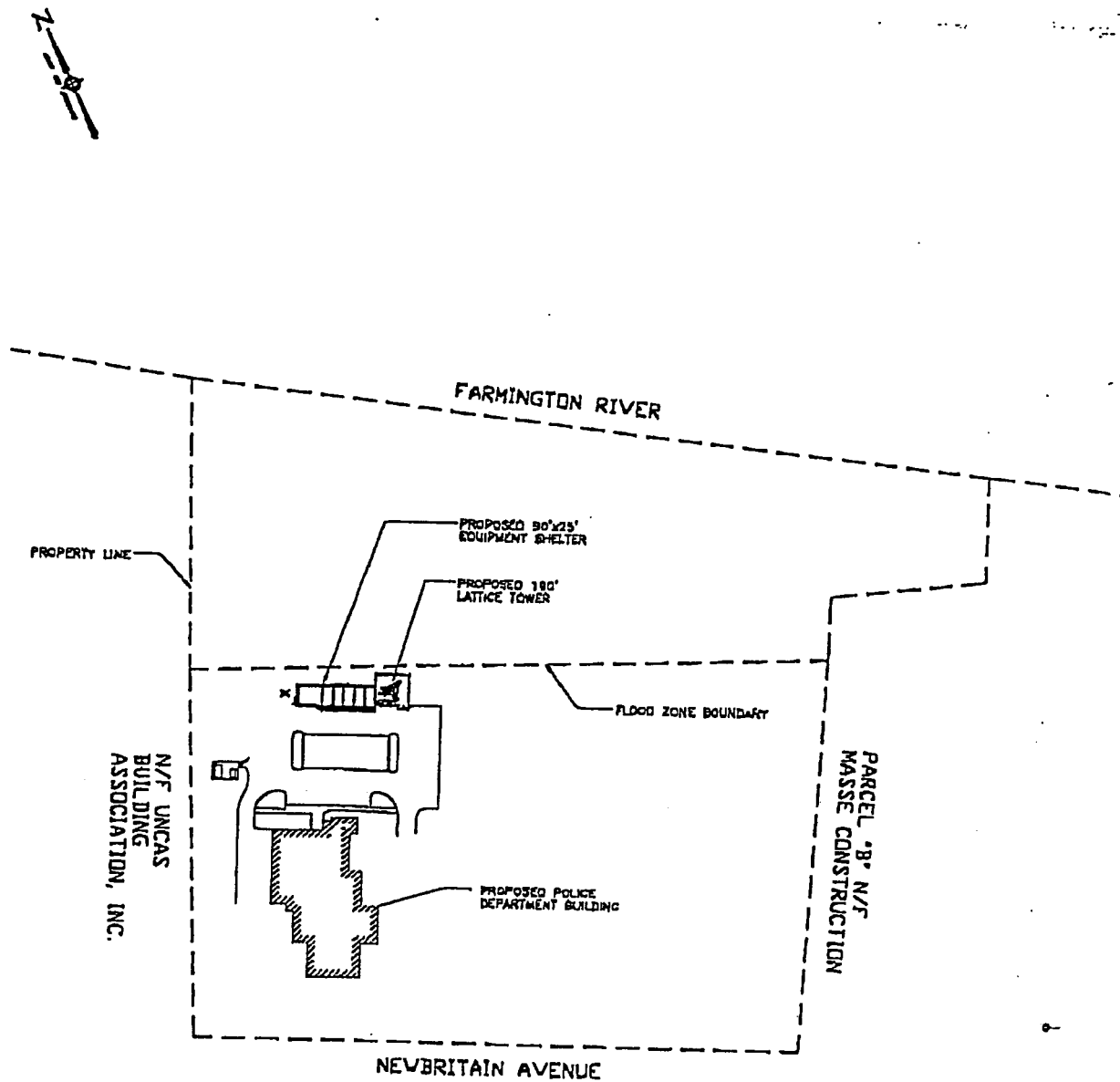
LANDLORD Initials

KE

TENANT Initials

3

Note: LANDLORD and TENANT may, at TENANT's option, replace this Exhibit with an exhibit setting forth the legal description of the property on which the Site is located and/or an as-built drawing depicting the Site.



INITIALS
KE
3

1 SITE PLAN
L-1 SCALE: 1"=200'-0"

SITE ID NO:
GT33XCS34

Designed by:

Drawn by: JM

Checked by:

Approved by:

URS CORPORATION AES

500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8562

SPRINT PCS
1 INTERNATIONAL BLVD. SUITE 800, 8TH FLOOR
MAHWAH, NJ 07435

FARMINGTON POLICE STATION
NEW BRITAIN AVE
FARMINGTON CONNECTICUT

1	23-23-01	REVISED
1	23-23-01	REVISED ANTENNA LOCATION
REV.	DATE	DESCRIPTION

Scale AS SHOWN Date 02-13-01

Job No. F301972.53 File No. L-1

Orig. No.

L-1

Page 2 of 3

EXHIBIT B

[attach Facility specifications]

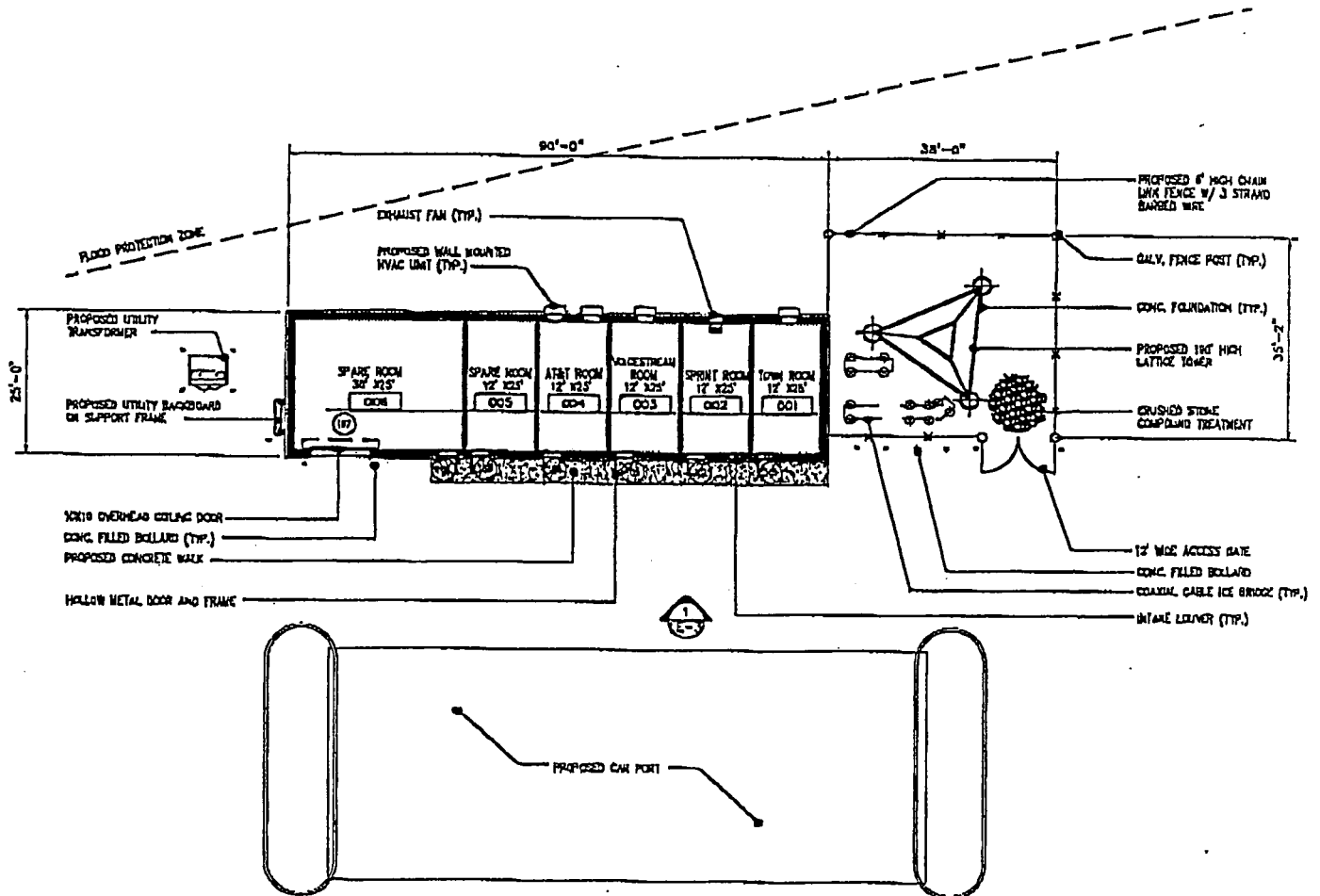
SEE PLANS/DRAWINGS L-2 AND L-3 ATTACHED HERETO AND INCORPORATED HEREIN.

LANDLORD Initials

KE

TENANT Initials

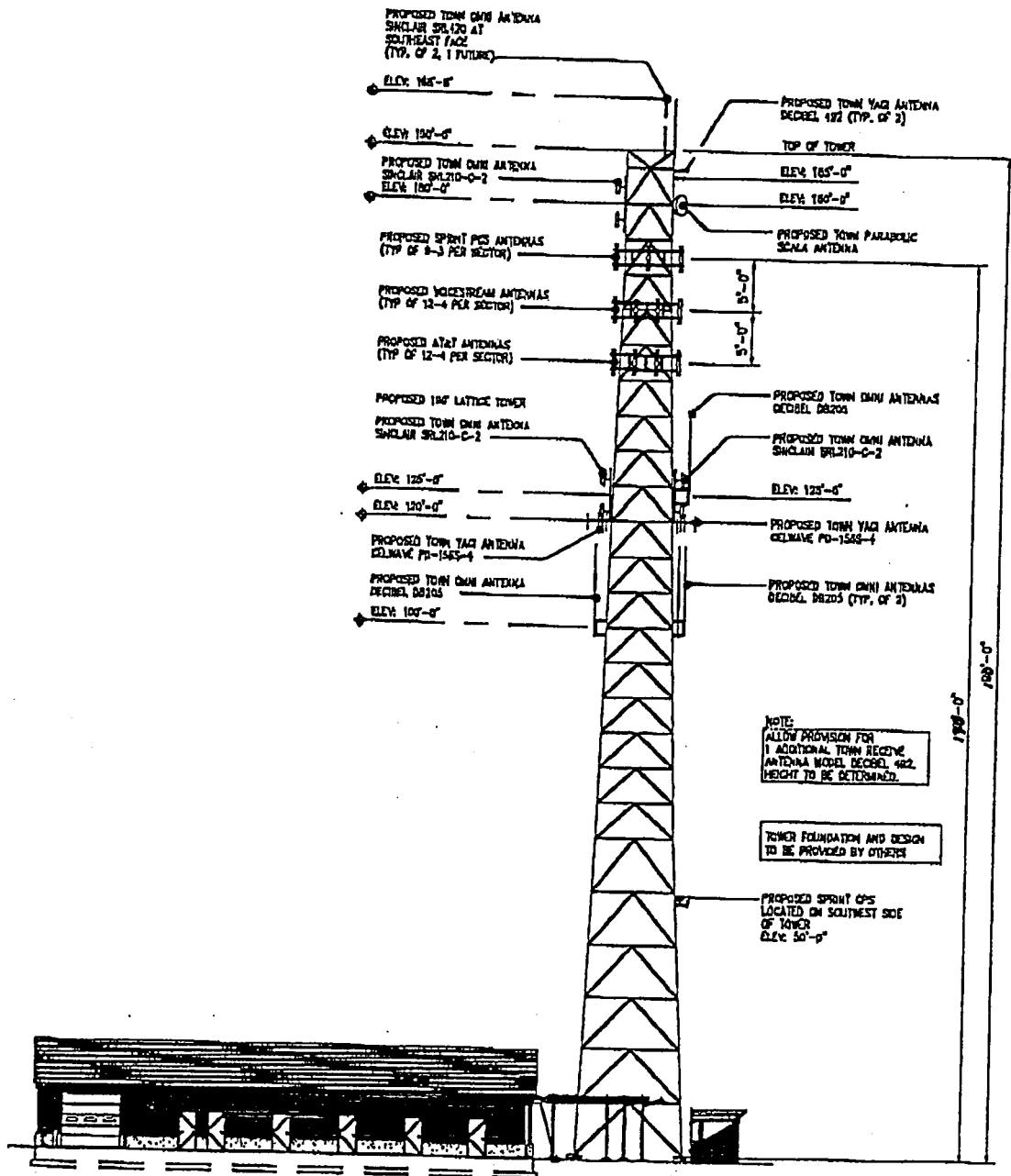
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INITIALS	
KE	
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1 PARTIAL SITE AND EQUIPMENT FLOOR PLAN
L-2 SCALE: 1"=30'-0"

SITE ID NO: CT33YC534 Designed by: Drawn by: RRH Checked by: Approved by:	URS CORPORATION AES 500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT 1-(860)-528-8882	SPRINT PCS 1 INTERNATIONAL BLVD, SUITE 800, 8TH FLOOR MAHWAH, NJ 07495 FARMINGTON POLICE DEPARTMENT NEW BRITAIN AVE FARMINGTON, CONNECTICUT	<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>2</td> <td>03-23-01</td> <td>REVISED</td> </tr> <tr> <td>1</td> <td>02-22-01</td> <td>REVISED ANTENNA LOCATION</td> </tr> </table> Sheet AS SHOWN Date: 02-13-01 Job No. FJ01972.32 File No. L-1	REV	DATE	DESCRIPTION	2	03-23-01	REVISED	1	02-22-01	REVISED ANTENNA LOCATION	Dwg. No. L-2 Dwg. 2 of 3
REV	DATE	DESCRIPTION											
2	03-23-01	REVISED											
1	02-22-01	REVISED ANTENNA LOCATION											



1 ELEVATION
L-3 SCALE: 1/32" = 1'-0"

INITIALS
E
3

SITE ID NO:
CT33XCS34
Designed by:
Drawn by: HLM
Checked by:
Approved by:

BBS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-523-8882

SPRINT PCS
1 INTERNATIONAL BLVD. SUITE 800, 8TH FLOOR
MAYWAH, NJ 07405

FARMINGTON POLICE DEPARTMENT
NEW BRITAIN AVE
FARMINGTON, CONNECTICUT

2	03-22-01	REVISED
1	02-22-01	REVISED ANTENNA LOCATION
REV. DATE	DESCRIPTION	
Scale: AS SHOWN	Draw: 02-13-01	
Job No: F301972.52	File No: L-2	Draw: 3 of 3

Draw. No.
L-3

EXHIBIT E

Landlord's Equipment

SEE EQUIPMENT LIST ATTACHED HERETO AND INCORPORATED HEREIN.

LANDLORD Initials KE

TENANT Initials 3

EXHIBIT E

FARMINGTON POLICE DEPARTMENT								
ANTENNA & FREQUENCIES NEW PD TOWER								
2/19/01								
Antenna	Qty	Frequency	Description	Base Station	Length	Ant. Height	Ant. Direction	Cable Dia.
DSPR950	1	955.35	960 Link to Ch 61, Parabolic	Micro Wave	4 feet	180 feet	South East	1 1/4 inch
TDF7220	1	855.2375	Main Backup, Omni 7.5dB	Main Station	8.7 feet	180 feet	South East	7/8 inch
		866.775	Detective	Main Station				
TDF7220	1	868.35	Future Trunked	Main Station	8.7 feet	180 feet	South East	7/8 inch
		867.9375	Future Trunked	Main Station				
		869.6625	Future Trunked	Main Station				
TDF8431	1	806.1625	RAFS, Yagi	Control Station	18 inches	185 feet	East	1/2 inch
		807.9125	RAFS	Control Station				
TDF8431	1	821.0125	ITAC, Yagi	Control Station	18 inches	185 feet	East	1/2 inch
		821.6125	ITAC	Control Station				
		823.0125	ITAC	Control Station				
TDD7260	1	154.19	Farmington PD, Omni 5.5dB	Main Station	10 feet	180 feet	South East	7/8 inch
TDD7260	1	154.265	Inter City, Omni	Main Station	10 feet	125 feet	East	1/2 inch
		163.74	Area 5 Emergency	Main Station				
		163.995	Area 3 Emergency	Main Station				
		155.34	Fire Ground	Main Station				
TDD7260	1	155.325	AMR Ambulance, Omni	Main Station	10 feet	125 feet	North West	1/2 inch
TDD8870	1	159.42	Farmington FD, Yagi	Control Station	39 inches	120 feet	South East	1/2 inch
TDD8870	1	154.01	Burlington FD, Yagi	Control Station	39 inches	120 feet	North West	1/2 inch
TDB6400	1	33.94	Harford County Fire, Omni	Main Station	18 feet	100 feet	East	1/2 inch
		33.5	Mutual Aid	Main Station				
TDB6400	1	33.04	Disaster Coordination, Omni	Main Station	18 feet	100 feet	North West	1/2 inch
TDB6400	1	45.86	State Police Hotline, Omni	Main Station	18 feet	100 feet	South East	1/2 inch
TDB6400	1	46.62	Public Works	Main Station	18 feet	125 feet	South East	1/2 inch
		46.68	Public Works	Main Station				
Tower installed with one side facing Rattlesnake Mountain								
in order to have two tower legs for installation of antennas in the								
direction of the mountain. Side arm brackets will be used for								
all antennas except control stations. They will be mounted to the								
tower legs.								

INITIALS
KE
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Notice of Lease Agreement

This notice evidences that a lease was made and entered into by written Cellular/Wireless Communications Lease Agreement dated _____, 2001, between Town of Farmington, a Connecticut Municipal Corporation ("Landlord") and Sprint Spectrum L.P., a Delaware limited partnership ("Tenant"), the terms and conditions of which are incorporated herein by reference.

Such Agreement provides in part that Landlord leases to Tenant a certain site ("Site") located at 319-321 New Britain Avenue, Town of Farmington, County of Hartford, State of Connecticut, within the property of Landlord which is described in Exhibit A attached hereto, with grant of easement for unrestricted, non-exclusive rights of access thereto and to electric and telephone facilities for a term of five years commencing on _____, 20____, which term is subject to three additional five year extension periods and then one additional four year extension period by Tenant. A copy of the Agreement is on file at the Town Manager's Office, Town of Farmington, 1 Monteith Drive, Farmington, Connecticut 06032-1053.

IN WITNESS WHEREOF, the parties have executed this Notice as of the day and year first above written.

LANDLORD

Town of Farmington, a Connecticut municipal corporation

By: Town of Farmington

Name: Kathleen A Eger

Title: Town Manager

Address: 1 Monteith Drive,
Farmington, CT 06032-1053

Signed, sealed and delivered in the presence of:

Owner Witnesses:

Sign: [Signature]
Print: JEFFREYS VATES

Sign: Ann Reohr

Print: ANN REOHR

TENANT

Sprint Spectrum, L.P., a Delaware limited partnership

By: [Signature]

Name: Michael W. Loucy

Title: Director of Site Development – Northeast Region

Address: Crossroads Corporate Center, Suite 800
1 International Boulevard
Mailstop: NJMAHA0101
Mahwah, NJ 07495

Signed, sealed and delivered in the presence of:

Witnesses:

Sprint Spectrum L.P.

Sign: [Signature]

Print: CHRISTOPHER PESCATORE

Sign: J. Wayne Medlin

Print: J. Wayne Medlin

STATE OF CONNECTICUT)
)
COUNTY OF HARTFORD) ss. *Farmington*

Before me, the undersigned, this 27 day of April, 2001, personally appeared Kathleen Egan, known to me to be the Town Manager of the Town of Farmington, Connecticut, a Connecticut municipal corporation, and the he/she as such officer, signer and sealer of the foregoing instrument, acknowledged the execution of the same to be his/her free act and deed as such officer, and the free act and deed of said Connecticut municipal corporation.

In Witness Whereof, I hereunto set my hand.

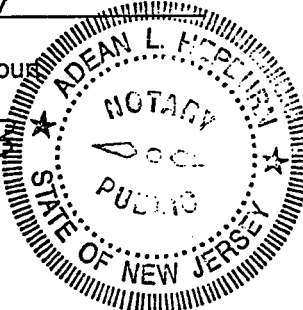
Ann M. Rehr
Feb. 28, 2003
Commissioner of the Superior Court
Notary Public
My Commission Expires:

STATE OF NEW JERSEY)
)
COUNTY OF BERGEN) ss. *Manahawick*

Before me, the undersigned, this 18th day of May, 2001, personally appeared Michael W. Loucy, known to me to be the Director, Site Development – Northeast Region of Sprint Spectrum L.P., a Delaware limited partnership, and the he in such capacity, and as signer and sealer of the foregoing instrument, acknowledged the execution of the same to be his free act and deed in such capacity, and the free act and deed of said limited partnership.

In Witness Whereof, I hereunto set my hand.

Adean L. Hepler
Commissioner of the Superior Court
Notary Public
My Commission Expires: 2003



FIRST AMENDMENT TO LEASE AGREEMENT

This Amendment made as of the 14 day of December 2001, by and between Sprint Spectrum, L.P., a Delaware partnership ("Tenant"), and the Town of Farmington, a Connecticut municipal corporation ("Landlord").

WITNESSETH:

WHEREAS, Tenant and Landlord entered into a certain Cellular/Wireless Communications Lease Agreement last dated May 18, 2001 ("Agreement");

WHEREAS, in response to Town approvals, the Tenant has agreed to provide a monopole-style tower, in lieu of the lattice-style tower referenced in the Agreement; and

WHEREAS, the parties wish to so amend the Agreement.

NOW THEREFORE, the parties hereto hereby agree as follows:

1. Paragraph 2 of the Agreement is amended by deleting the second bullet thereunder and substituting the following in its place:

- Tower antenna space between the 167 and 173 foot levels on the 190 foot monopole-style tower (the "Tower") to be constructed by TENANT on behalf of LANDLORD;

2. The Plans and Drawings attached to the Agreement as Exhibit B is hereby deleted in its entirety, and the Project Description attached hereto and made a part hereof, as initialed by the parties, is hereby substituted in its place as "Exhibit B". All references to Exhibit B in the Agreement shall be deemed to be Exhibit B as herein amended.

The Agreement in all other respects is hereby ratified and confirmed.

The parties have executed this Agreement as of the date and year first above written.

LANDLORD

TOWN OF FARMINGTON

By:

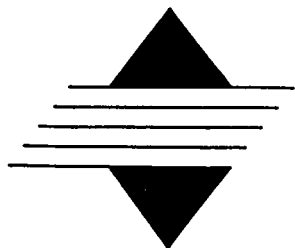
Kathleen A. Eagen
Kathleen A. Eagen
Its Town Manager

12/14/01

TENANT

SPRINT SPECTRUM, L.P.

By: Michael W. Loucy
MICHAEL W. LOUCY
DIRECTOR-SITE DEVELOPMENT
NORTHEAST REGION



Sprint PCS

SITE I.D.# CT33XC534

FARMINGTON POLICE DEPT.

NEW BRITAIN AVE
FARMINGTON, CONNECTICUT

PROJECT DESCRIPTION

PROPOSED INSTALLATION OF A WIRELESS
TELECOMMUNICATIONS FACILITY TO CONSIST OF
A 190' MONOPOLE AND EQUIPMENT BUILDING.

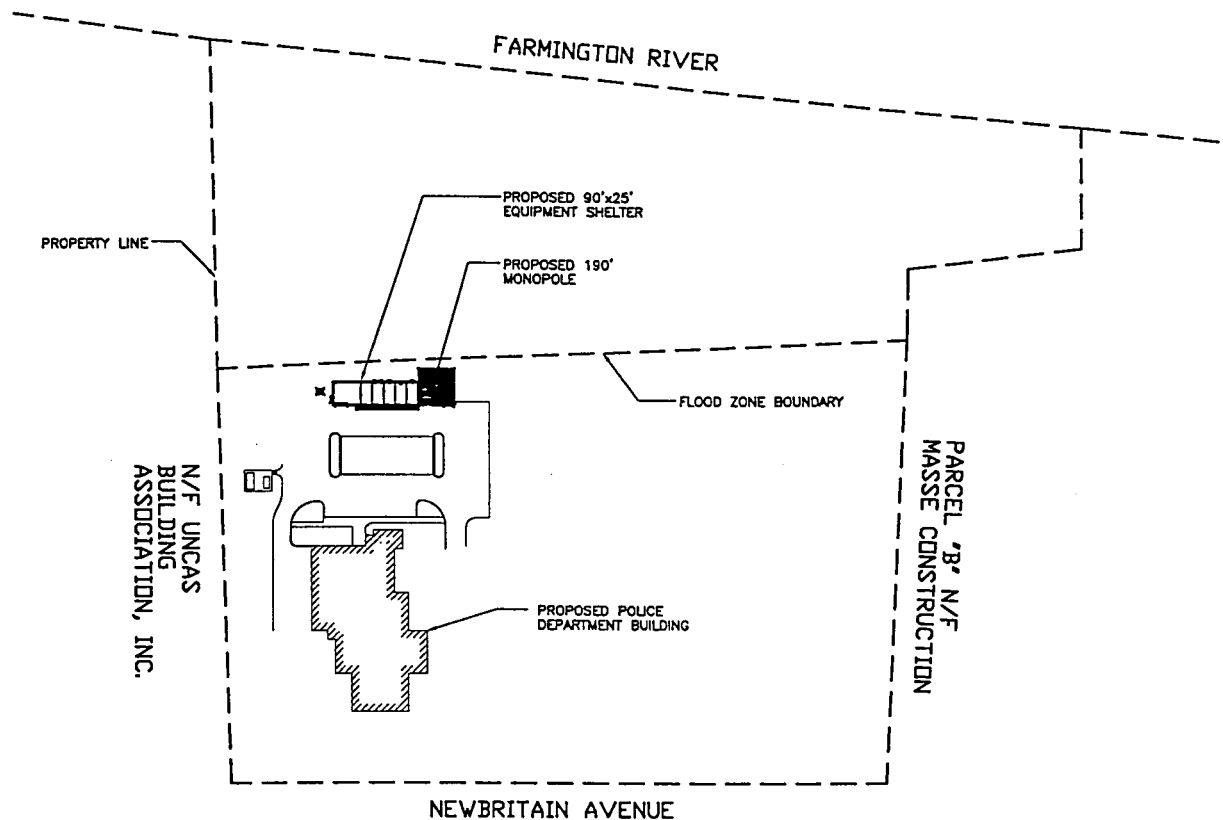
PROJECT DATE 12-13-01

SHEET INDEX	
T-1	TITLE SHEET
L-1	SITE PLAN
L-2	PARTIAL SITE AND EQUIPMENT FLOOR PLAN
L-3	ELEVATION

PROJECT INFORMATION	
SITE NAME:	FARMINGTON POLICE DEPARTMENT
SITE ADDRESS:	NEW BRITAIN AVE FARMINGTON CONNECTICUT
PROPERTY OWNER:	TOWN OF FARMINGTON
CONTACT NAME:	JEFFREY OLLENDORF 860-675-2325
CONSTRUCTION MANAGER:	JEFF YORK 45 SOUTH MAIN STREET WEST HARTFORD, CONNECTICUT 06107 (860) 232-3125
A/E FIRM:	URS GREINER WOODWARD CLYDE INC. 500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT (860) 529-8882
A/E CONTACT PERSON:	ALITZ ABADJIAN URS GREINER WOODWARD CLYDE INC. 795 BROOK STREET, BUILDING 5 ROCKY HILL, CONNECTICUT (860) 529-8882
A/E PROJECT NO.:	F300001972.52/F02

ICE 12/14/01
3

SITE ID NO: CT33XC534	URS CORPORATION AES 795 BROOK STREET, BLDG 5 ROCKY HILL, CONNECTICUT 1-(860)-529-8882	SPRINT PCS 1 INTERNATIONAL BLVD. SUITE 800, 8TH FLOOR MAHWAH, NJ 07485		3 10-25-01 REVISED ANTENNA LOCATIONS		Dwg. No. T-1	
Designed by:				2 03-22-01 REVISED			
Drawn by:		PJS			1 02-22-01 REVISED ANTENNA LOCATION		
Checked by:					REV. DATE: DESCRIPTION		
Approved by:					Scale: AS SHOWN Date: 02-13-01		
		FARMINGTON POLICE DEPARTMENT NEW BRITAIN AVE FARMINGTON CONNECTICUT		Job No. F301972.52 File No. T-1		Dwg. 1 of 4	



KE 12/14/01



1 SITE PLAN
L-1 SCALE: 1"=200'-0"

SITE ID NO:
GT33XC534

Designed by:

Drawn by: JM

Checked by:

Approved by:

URS CORPORATION AES

795 BROOK STREET, BLDG 5
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

SPRINT PCS
1 INTERNATIONAL BLVD. SUITE 800, 8TH FLOOR
MAHWAH, NJ 07485

FARMINGTON POLICE DEPARTMENT
NEW BRITAIN AVE
FARMINGTON CONNECTICUT

3	10-25-01	REVISED ANTENNA LOCATIONS
2	03-22-01	REVISED
1	02-22-01	REVISED ANTENNA LOCATION
REV.	DATE:	DESCRIPTION

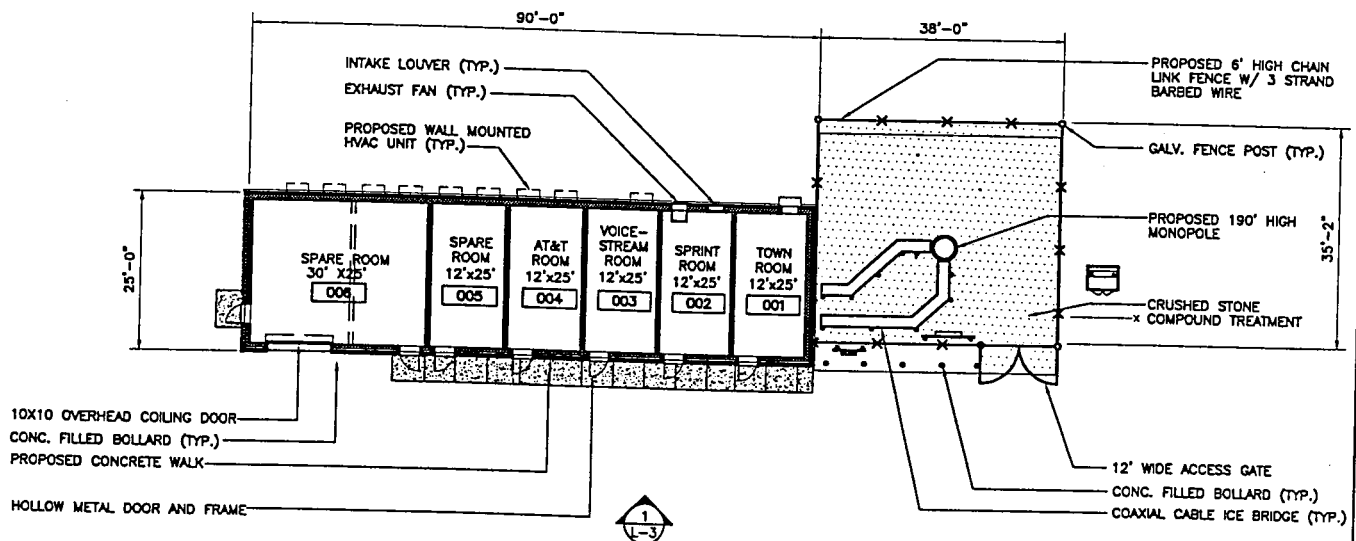
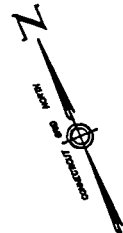
Scale: AS SHOWN Date: 02-13-01

Job No. F301972.52 File No. L-1

Dwg. No.

L-1

Dwg. 2 of 4

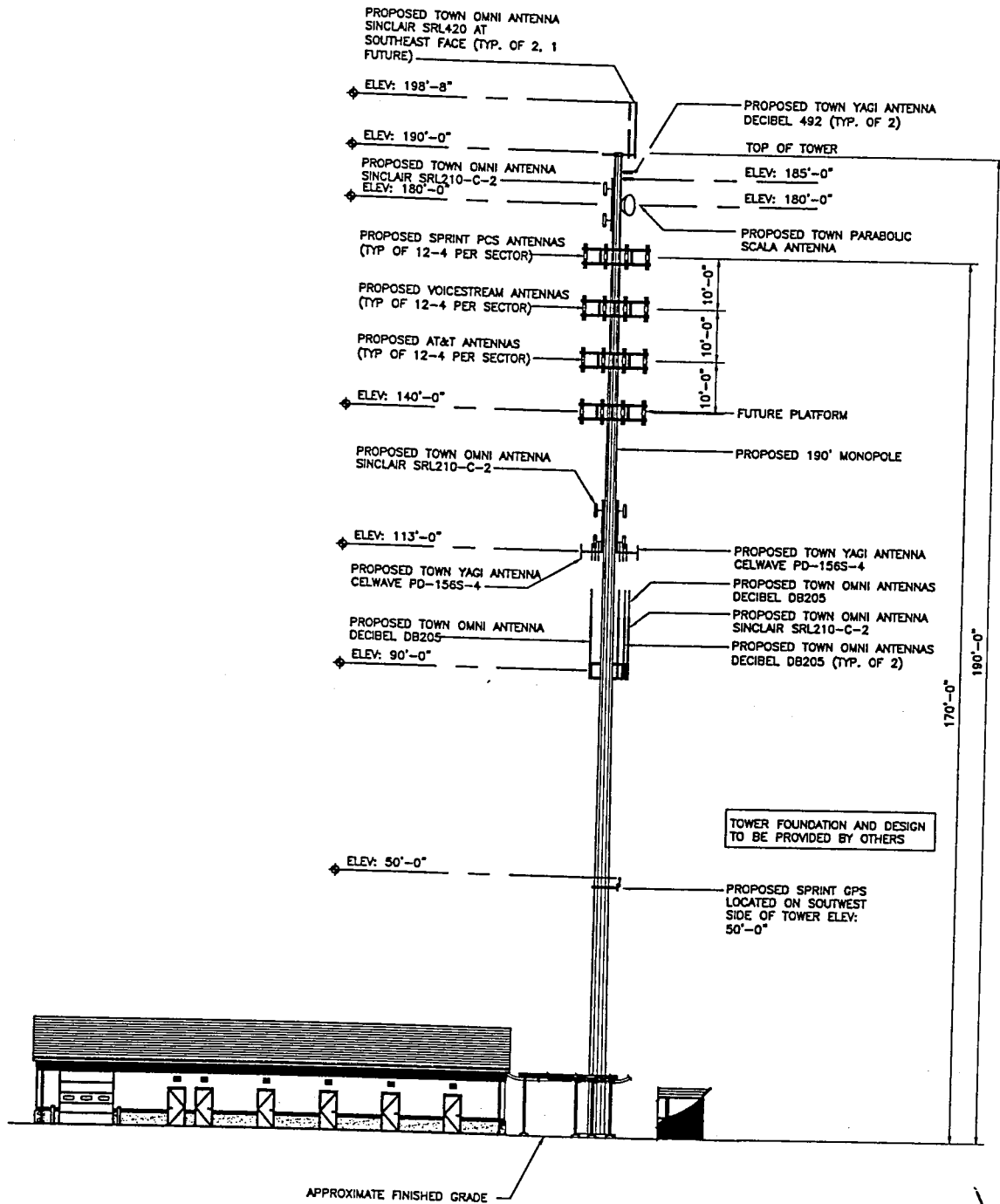


KE 12/14/01

INITIAL
13

1 PARTIAL SITE AND EQUIPMENT BUILDING FLOOR PLAN
L-2 SCALE: 1"=30'-0"

SITE ID NO: CT33XC534 Designed by: Drawn by: RRH Checked by: Approved by:	URS CORPORATION AES 795 BROOK STREET, BLDG 5 ROCKY HILL, CONNECTICUT 1-(860)-529-8882	SPRINT PCS 1 INTERNATIONAL BLVD. SUITE 800, 8TH FLOOR MAHWAH, NJ 07405 FARMINGTON POLICE DEPARTMENT NEW BRITAIN AVE FARMINGTON CONNECTICUT	3 10-25-01 REVISED ANTENNA LOCATIONS 2 03-22-01 REVISED 1 02-22-01 REVISED ANTENNA LOCATION REV. DATE: DESCRIPTION	Dwg. No. L-2
			Scale: AS SHOWN Date: 02-13-01 Job No. F301972.52 File No. L-1	Dwg. 2 of 4



1 ELEVATION
L-3 SCALE: 1/32" = 1'-0"

ICE 12/14/01

INITIAL
13

SITE ID NO:
CT33XC534

Designed by:

Drawn by: HLM

Checked by:

Approved by:

URS CORPORATION AES
795 BROOK STREET, BLDG 5
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

SPRINT PCS
1 INTERNATIONAL BLVD, SUITE 800, 8TH FLOOR
MAHWAH, NJ 07405

FARMINGTON POLICE DEPARTMENT
NEW BRITAIN AVE
FARMINGTON CONNECTICUT

3	10-25-01	REVISED ANTENNA LOCATIONS
2	03-22-01	REVISED
1	02-22-01	REVISED ANTENNA LOCATION
REV.	DATE:	DESCRIPTION
Scale:	AS SHOWN	Date: 02-13-01
Job No.	F301972.52	File No. L-2

Dwg. No.
L-3

Dwg. 3 of 4



FOR TP2C USE

NUMBER 12

TYPE OF APPLICATION

REC. NDC.
REC. AHC.

- | | |
|--|--|
| <u> </u> Change of Zone | <u> X </u> Amendment to Regulations |
| <u> X </u> Special Permit | <u> X </u> Site Plan Approval Modification |
| <u> </u> Removal or Deposit of Earth Products | <u> </u> Waiver |

675-2350
654-0703

1. Name of applicant Town of Farmington/Sprint Spectrum, LP Phone 654-0703
Mailing address 1 Monteith Dr., Farmington, CT / 1 International Blvd., Mahwah, NJ
2. Name of owner Town of Farmington
Mailing address 1 Monteith Drive, Farmington, CT 06032
3. Property address 319-321 New Britain Avenue Acreage 13.2 Acres
4. Assessor's lot number 1-8
5. Zoning: Present CR Proposed CR
6. Is parcel within 500 feet of municipal boundary? Yes No X
7. Description of request Erection of communications tower up to 200 feet in accordance with Article IV Sec. 23 of the zoning regulations as revised. Revisions to Article IV Sec. 23 as noted.
8. Please indicate adjoining property owners and location, as follows: (Attach separate sheet if necessary.)
- Bounded Northerly by: Farmington River
- Easterly by: Scaven and Wayne Masac - 74 Harris Rd., Avon, CT 06001
 Jones Destruction Inc. - P.O. Box 107, Farmington, CT 06034
 Dorothy Bauer 340 New Britain Ave., Unionville, CT 06085
- Southerly by: Black and Warner P.O. Box 121, Unionville, CT 06085
 Mancini Bros. Inc. 19 Shadow Lane, West Hartford, CT 06110
- Westerly by: Uncas Building Assoc. Inc. - P.O. Box 32, Unionville, CT 06085
9. All information submitted with this application is true and accurate to the best of my knowledge. The applicant understands that this application is to be considered complete only when all information and documents required by the Commission have been submitted.

Date January 5, 2001

Signature of Petitioner
(Must be owner or holder of option to
purchase or agent thereof)

PLEASE READ THE FOLLOWING

- A. Applications for changes of zone and special permits require notification of the public hearing by Certified Mail by the applicant to all property owners within 200 feet of any boundary of the subject property no later than 10 days prior to such hearing. Receipts for such Certified Mail shall be provided to the Planning Department prior to the public hearing.
- B. Applications for changes of zone and special permits require the posting of a sign on the subject property 7 days prior to the scheduled public hearing. A \$25.00 deposit is required for such signs, refundable upon return of the sign.
- C. Maps and Plans: This application must be accompanied by at least 8 copies of plans 24" x 36" in size. A checklist of data to be included on plans is available.
- D. Filing Fee: The filing fee must be paid to the Farmington Tax Collector before acceptance of application by the Town Planner (see Fee Schedule available from Planning Office).
- E. Sewer connection charges in relation to site plans should be checked with the Town Engineer's Office.

EXHIBIT F

THE TOWN OF FARMINGTON

INCORPORATED 1845



TOWN HALL
1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 0 132-1063
INFORMATION (860) 675-2300
FAX (860) 675-7140
"TOWN TALK" (860) 675-2301

July 27, 2001

Kathleen Eagen, Town Manager
Town of Farmington
1 Monteith Drive
Farmington, CT. 06032

Re.: Town/Sprint Communications Tower, 319 - 321 New Britain Avenue

Dear Ms. Eagen,

At a meeting of the Town Plan and Zoning Commission held on July 23, 2001, it was unanimously voted to grant special permit and site plan approval for erection of a monopole communications tower up to 200' in height and installation of gazebo for property located at 319 - 321 New Britain Avenue, CR/R30 zone, with the condition that the tower will be dismantled when it is no longer actively used or other means of transmitting the communications from this facility become technically possible.

Special permits must be recorded on the land records. The certificate for such filing will be available in the Planning Department on Monday, August 13, 2001, which is the first business day following the expiration of the appeal period.

If you have any questions, please contact the Planning Department at 675-2325.

Very truly yours,

Donald L. Banta (B.L.)
Donald L. Banta, Secretary
Town Plan and Zoning Commission

DLB:bl



Doc 4266

845 Am Town Clerk

CERTIFICATE OF SPECIAL PERMIT GRANTED BY
THE FARMINGTON PLAN AND ZONING COMMISSION
PURSUANT TO PUBLIC ACT 75-317

At a meeting held on July 23, 2001 the Town Plan and Zoning Commission of the Town of Farmington voted to approve the following special permit:

1. Application Number: Z-0125
2. Owner(s) of Record: Town of Farmington
3. Applicant(s): Town of Farmington & Sprint Spectrum LP
4. Description of Premises: 319 - 321 New Britain Avenue
5. The provision of the special permit, including the specific section of the Farmington Zoning Regulations, is as follows:

Special permit for erection of communications tower up to 200' in height and installation of gazebo in CR zone, under Article IV, Special Regulations, Section 23, Commercial Wireless Telecommunications Sites, and per conditions on file with the Planning Department, and also Article II, Use Regulations, Section 13, CR zone.

FARMINGTON TOWN PLAN AND ZONING COMMISSION

By _____ James F. Brown (Baker)
Chairman