Copy

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

September 1, 2000

Peter W. van Wilgen
Springwich Cellular Limited Partnership
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: EM-SCLP-097-000807 - Springwich Cellular Limited Partnership (SCLP) notice of intent to modify an existing telecommunications facility located off of Fairfield Drive in Newtown, Connecticut (Docket No. 75).

Dear Mr. van Wilgen:

At a public meeting held on August 31, 2000, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated August 7, 2000. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/laf

c: Honorable Herbert C. Rosenthal, First Selectman, Town of Newtown
Michael Murphy, AT&T Wireless
Sandy Carter, Verizon Wireless
J. Brendan Sharkey, VoiceStream Wireless

I:\siting\em\springwich\newtown\dc083100.doc

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

August 21, 2000

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

RE: EM-SCLP-097-000807 - Springwich Cellular Limited Partnership (SCLP) notice of intent to modify an existing telecommunications facility located off of Fairfield Drive in Newtown, Connecticut (Docket No. 75).

Dear Mr. Rosenthal:

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

The Council will consider this item at the next meeting scheduled for August 31, 2000, at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

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

Thank you for your cooperation and consideration.

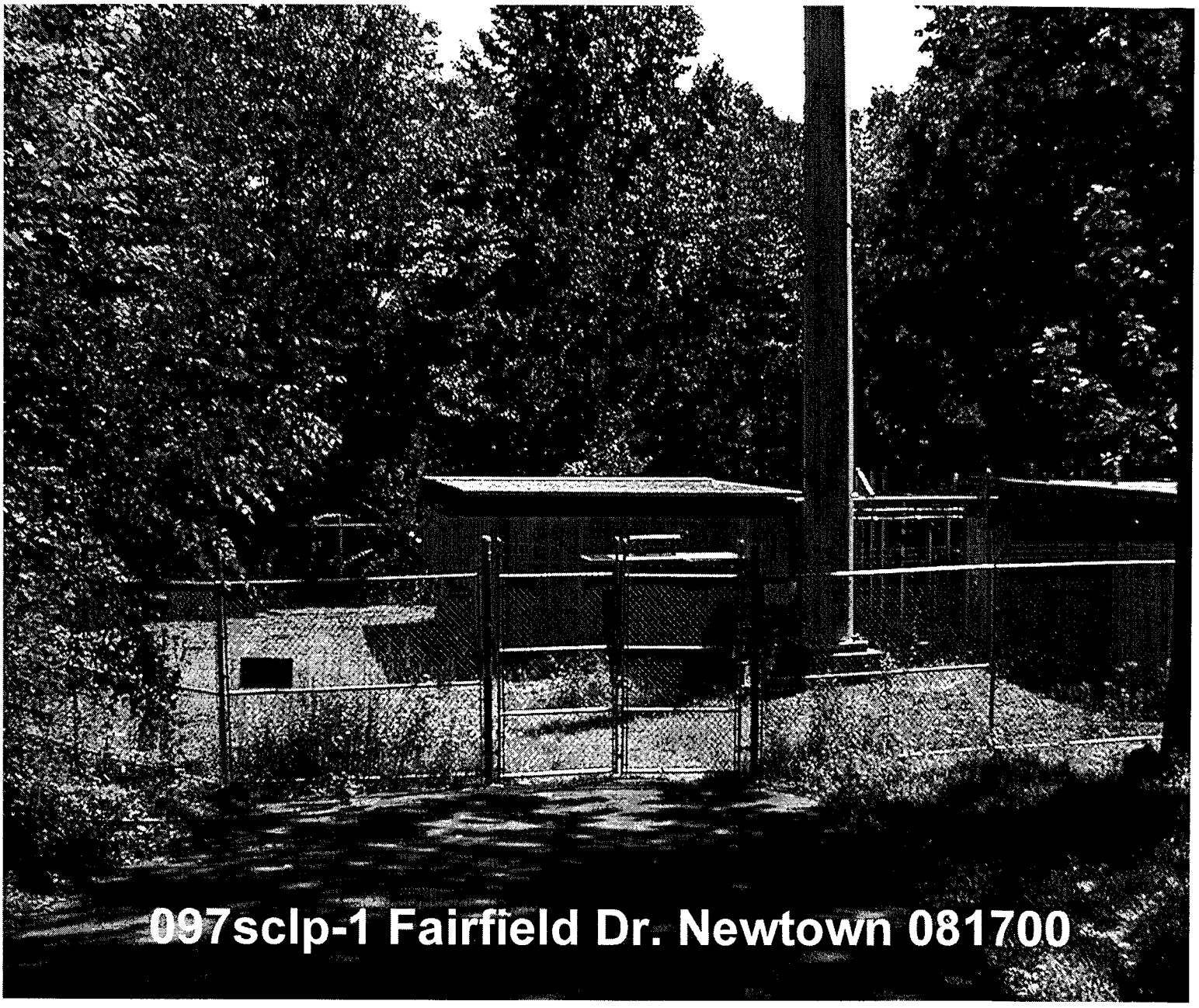
Very truly yours,

Joel M. Rinebold
Executive Director

JMR/RKE/laf

Enclosure: Notice of Intent

I:\siting\cm\springwich\newtown\rosenth3.doc


097sclp-1 Fairfield Dr. Newtown 081700

TS-SCLP-091-000807

500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7730
Fax: (860) 513-7614

Peter W. van Wilgen
Director – Real Estate Operations

August 7, 2000

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

Re: Springwich Cellular Limited Partnership – Newtown Cell Site

Dear Mr. Gelston:

Springwich Cellular Limited Partnership ("SCLP") plans to allow AT&T Wireless PCS LLC, d/b/a AT&T Wireless Services ("AT&T"), to install antennas and related equipment at the existing SCLP facility in Newtown, Connecticut. Verizon Wireless, f/k/a Bell Atlantic Mobile ("Verizon"), has shared this site with SCLP since 1993. VoiceStream Communication, f/k/a Omnipoint Communications, Inc. ("VoiceStream" or "Omnipoint"), has shared this facility with SCLP since 1998.

Please accept this letter as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to Section 16-50j-72(b). In compliance with Section 16-50j-73, a copy of this letter is being sent to the First Selectman of Newtown.

Enclosed with this letter are a site location map, a site plan, and existing and proposed tower profiles. Engineering information concerning the structural carrying capacity of the modified (replacement) tower will be provided to the Council as soon as it is available.

The existing facility consists of a 150 foot monopole, two equipment shelters and one concrete equipment pad located off Fairfield Drive in Newtown at coordinates N 41° 25' 32" and W 73° 22' 27" (NAD 83). The facility is located adjacent to Route I-84, and was approved by the Connecticut Siting Council ("Council") in its May 13, 1987 Decision and Order in Docket No.75.

AT&T plans to attach to the tower up to twelve (12) panel antennas, approximately 5 feet in height, and to install an equipment shelter, approximately 12' x 20', adjacent to the tower.

In order to accommodate the additional AT&T use, as well as additional carriers in the future, the existing tower must be replaced to meet structural and engineering requirements. SCLP proposes to replace the existing 150' monopole with a more structurally sturdy 150' monopole. The existing 150' tower will be dismantled and removed. The proposed design would also meet Verizon's need for a full antenna configuration on a platform.

The changes to the tower site do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

First, the height of the structure will be slightly lower than it is presently. Based on the design of new, multiple carrier monopoles, the tip of the VoiceStream antennas mounted above the top of the monopole will extend to 163'.

Second, the proposed changes will not extend the site boundaries. SCLP leases approximately 20,000 square feet of land at this site. All proposed changes reflected on the attached site plan will take place within the existing fenced area and lease boundaries.

Third, the proposed additions will not increase the noise levels at the existing facility by six decibels or more. Except for noise resulting from construction, the only additional sounds will be from heating, cooling and ventilation mechanisms for AT&T's equipment.

Fourth, operation of the additional antennas will not increase the total radio frequency electromagnetic power density, measured at the tower base, to a level at or above the standards adopted by the FCC and Connecticut Department of Health. The following chart shows the "worst case" power density calculations at the base of the tower for each of the proposed carriers in accordance with FCC OET Bulletin No. 65 (1997). The tower base represents the closest publicly accessible point within the broadcast field of the antennas.

Company	Frequency Range (MHz)	Height (feet)	Power Density (mW/cm^2)	ANSI/EEE Standard (mW/cm^2)	Percent of Standard
Omnipoint	1945	160	0.0237**	1.0000	2.37%
SCLP	880	150	0.0332	0.5867	5.66%
Verizon	869	140	0.0384	0.5793	6.62%
AT&T	D: 1945 E: 1985	130	0.0189	1.0000	1.89%
				Total Percent of Standard	**16.54%**

**Omnipoint power density provided by VoiceStream (formerly Omnipoint) without further details.

Thus, the calculated "worst-case" power density for the combined operations at the site is 16.54% of the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

Additionally, the replacement tower will be designed to accommodate multiple users, in order to further the intent of C.G.S. Section 16-50aa. VoiceStream's antennas will be placed on a pole mount at the top of the tower, with a center of radiation at approximately the 160' level. SCLP's antennas will be placed on a platform with a center of radiation at approximately the 150' level of the tower. Verizon's antennas will be placed on a platform with a center of radiation at approximately the 140' level of the tower. AT&T's antennas will be placed on a platform with a center of radiation at approximately the 130' level of the tower. The tower will be designed to accept lower platforms for three future users; however, the platforms will not be installed until a definite need arises.

For the foregoing reasons, SCLP respectfully submits that the proposed modifications to accommodate additional tower sharing at the Newtown facility do not have a substantial adverse environmental effect and that the changes constitute an exempt modification under R.C.S.A. Section 16-50j-72(b).

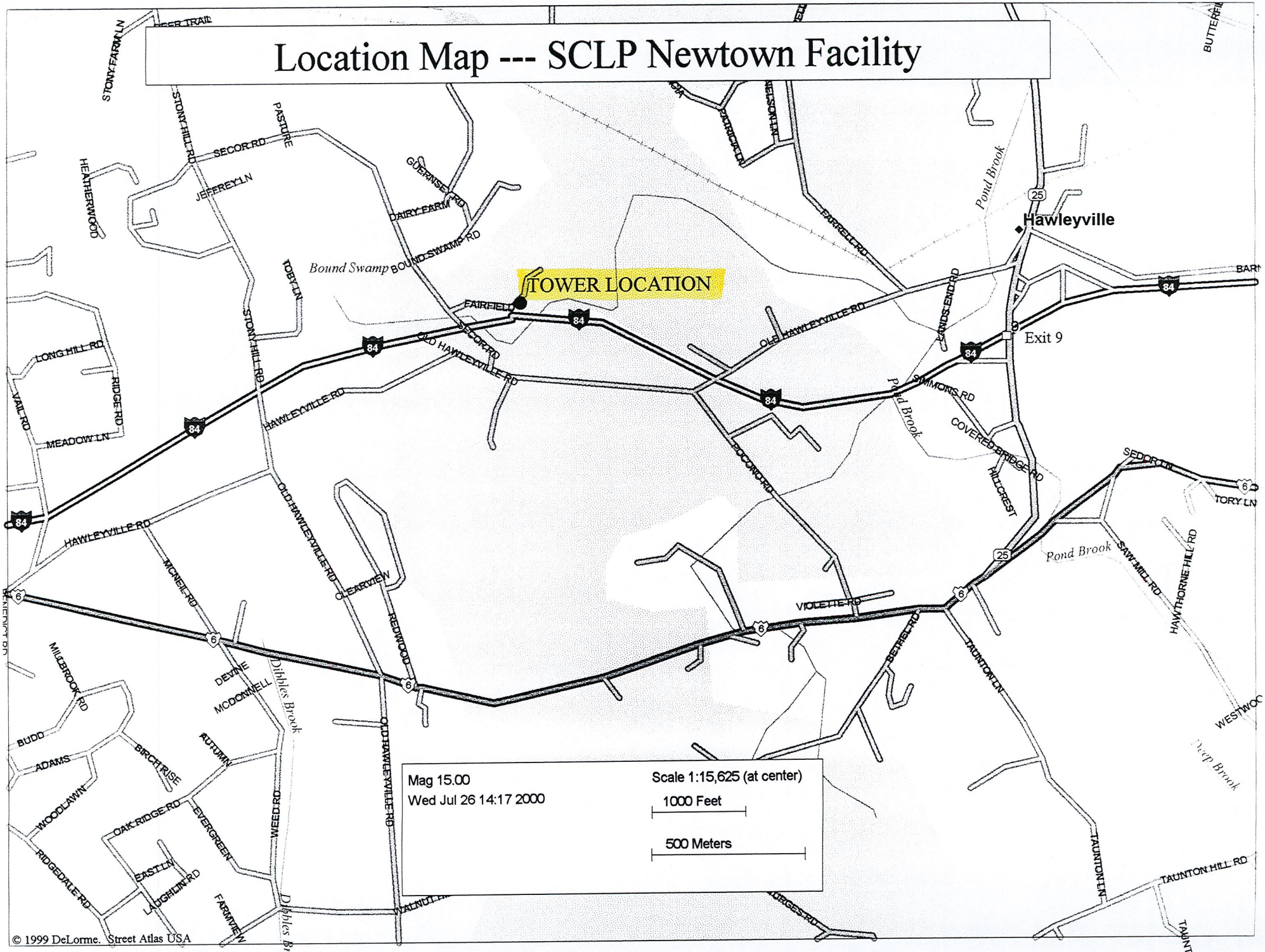
Respectfully submitted,

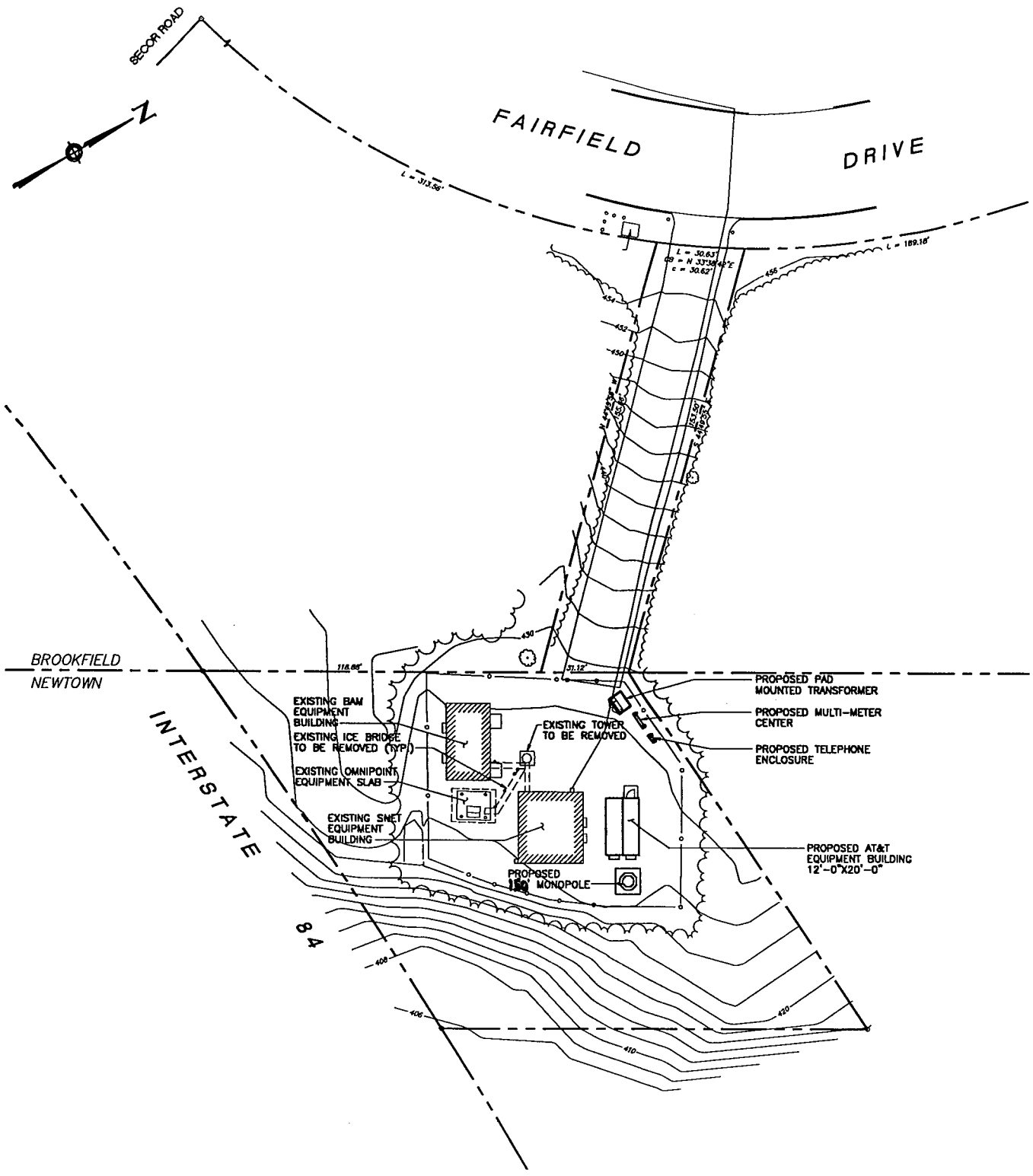
Peter W. van Wilgen
Director – Real Estate Operations

Enclosures

cc: Honorable Herb Rosenthal, First Selectman
Town Hall, 45 Main Street
Newtown, CT 06470

Location Map --- SCLP Newtown Facility





1 / SC-1 SITE PLAN
SCALE: 1" = 50'-0"

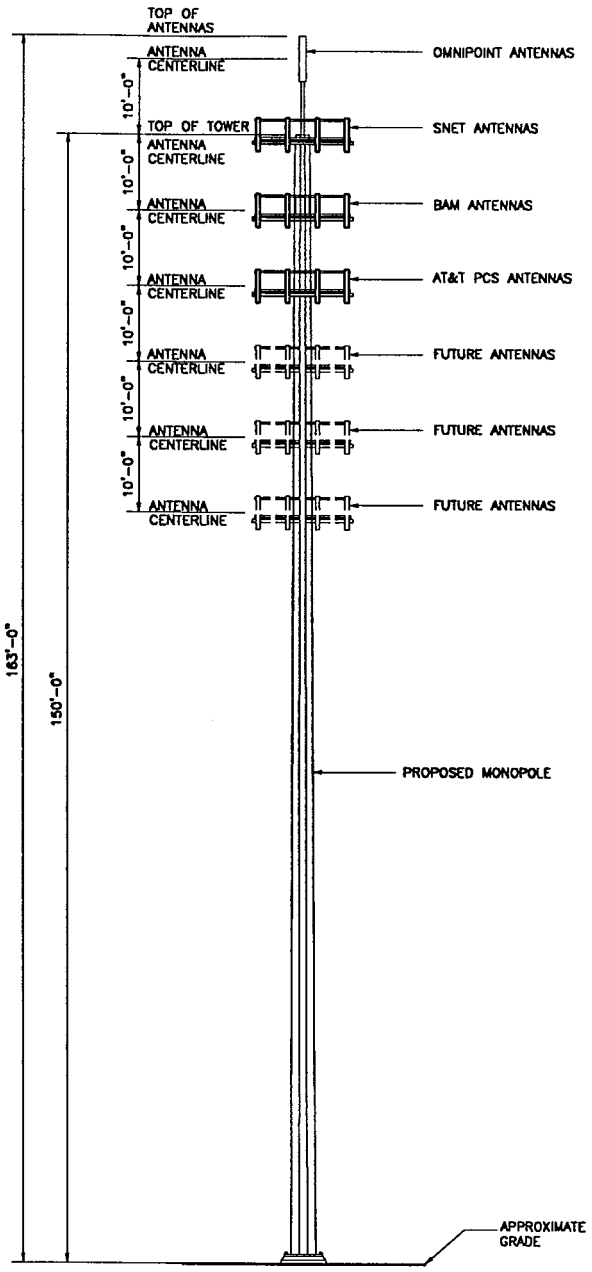
SITE ID NO:		
Designed by:	BMS Grainer Woodward Clyde A-E-S	SPRINGWICH CELLULAR LIMITED PARTNERSHIP
Drawn by: BMS	500 ENTERPRISE DRIVE	WIRELESS COMMUNICATIONS FACILITY
Checked by:	ROCKY HILL, CONNECTICUT	SITE ADDRESS: NEWTOWN SITE
Approved by:	1-(860)-529-8882	FAIRFIELD DRIVE
		NEWTOWN, CONNECTICUT

REV.	DATE:	DESCRIPTION
1	07-31-00	REVISIONS

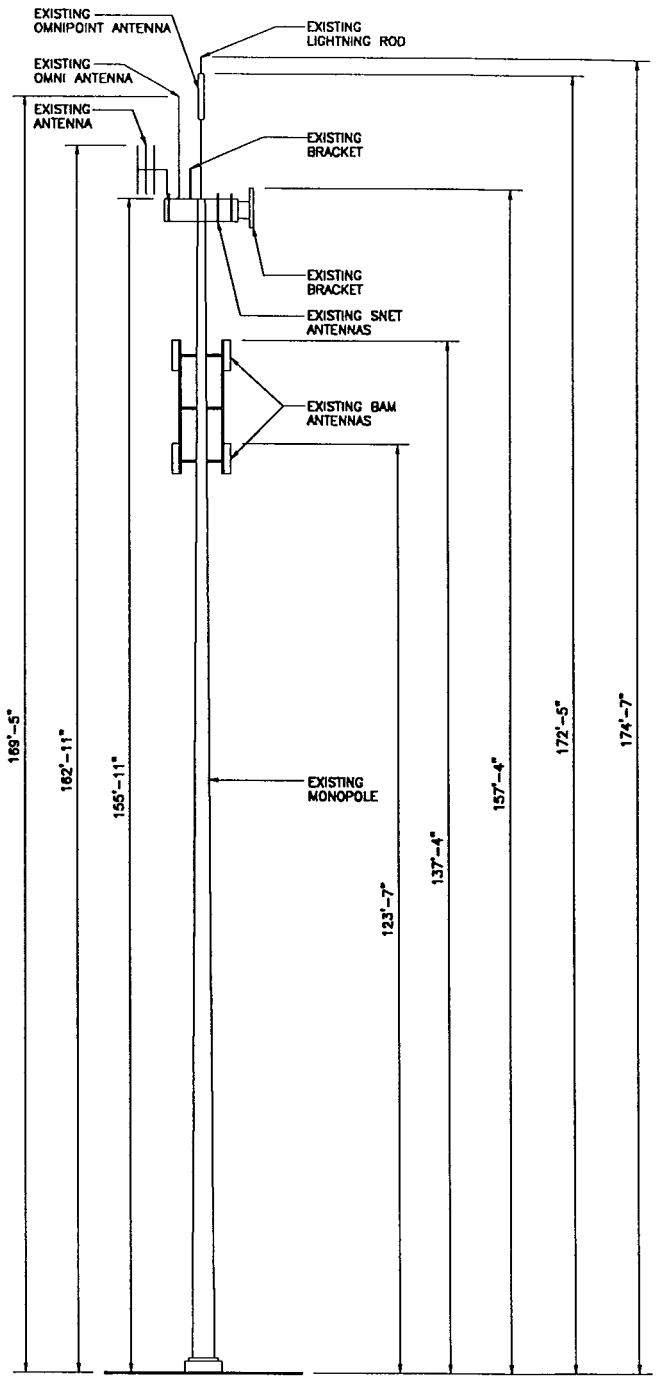
Scale: AS NOTED | Date: 05-30-00
Job No. F301804.08 | File No.

Dwg. No. SC-1

Dwg. 1 of 2



2 / SC-2 PROPOSED TOWER ELEVATION
SCALE: 1" = 25'-0"



1 / SC-2 EXISTING TOWER ELEVATION
SCALE: 1" = 25'-0"

SITE ID NO:		
Designed by:		
Drawn by: BMS		
Checked by:		
Approved by:		

BRS Greiner Woodward Clyde A-E-S
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

SPRINGWICH CELLULAR LIMITED PARTNERSHIP
WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS: NEWTOWN SITE
FAIRFIELD DRIVE
NEWTOWN, CONNECTICUT

REV.	DATE:	DESCRIPTION
3	08-02-00	REV. OMNIPOINT ANT.
2	07-31-00	REVISIONS
1	07-19-00	REVISED ANTENNAS

Scale: AS NOTED | Date: 05-30-00
Job No.F301804.08 | File No.

Dwg. No. SC-2

Dwg. 2 of 2

SNET Cellular, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7636
Fax: (860) 513-7190

Steven L. Levine
Real Estate Consultant

April 6, 2001

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

Re: EM-SCLP-097-000807 - SNET Cellular, LLC (formerly Springwich Cellular Limited Partnership) notice of intent to modify an existing telecommunications facility located off Fairfield Drive, Newtown, Connecticut (Docket No. 75).

Dear Mr. Gelston:

Pursuant to SNET's notice in EM-SCLP-097-000807, I enclose structural design calculations for the 150-foot replacement monopole tower off Fairfield Drive in Newtown which the Council approved on August 31, 2000. The analysis demonstrates that the new monopole has been designed to support planned antenna loading under normal and extreme weather conditions.

Please feel free to call me at (860) 513-7636 with questions concerning this submittal. Thank you for your consideration in this matter.

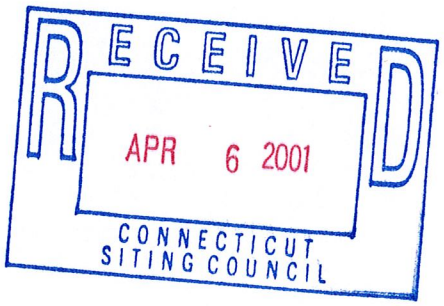
Respectfully yours,

Steve Levine
Real Estate Consultant

Enclosure

ENGINEERED
ENDEAVORS
INCORPORATED
The Experienced Point o

Bechtel Telecommunications
Structure & Foundation
Design Calculations
152' Monopole Monopole
Site: Newtown/CT-177
EEI Job #: 8238-P01



ENGINEERED ENDEAVORS INCORPORATED

7610 Jenther Drive ■ Mentor, Ohio 44060
Telephone: (440) 918-1101 ■ Telefax: (440) 918-1108

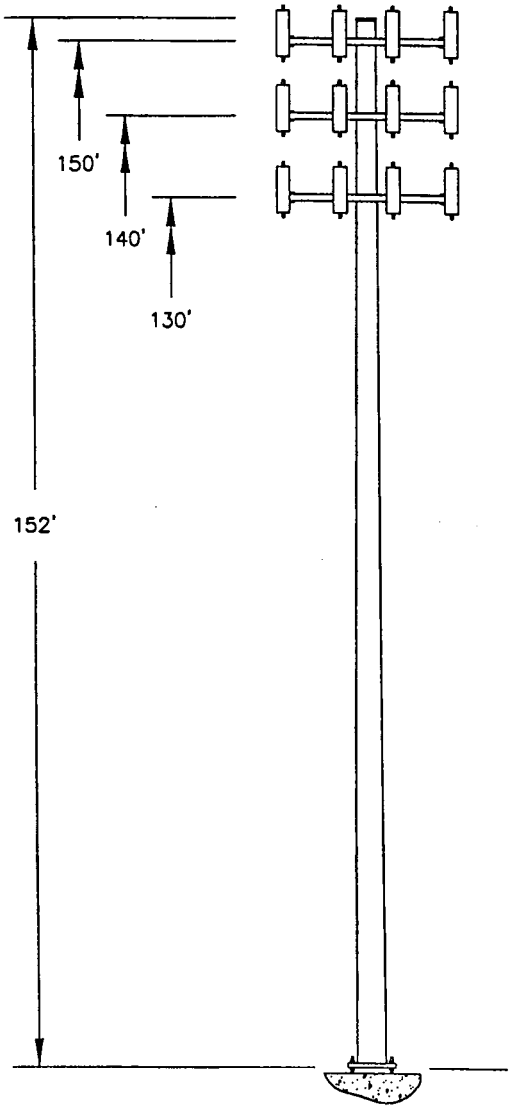
ENGINEERED ENDEAVORS INCORPORATED

Customer BECHTEL By JAY PARR 1/30/01 Date

Structure 152' MONOPOLE Checked ____ 8238 Job/Quote No.

SITE LOCATION: FAIRFIELD COUNTY, CT
SITE NAME: NEWTOWN/CT-177

INITIAL LOADING
REVISION II



ANTENNA LOADING:

(12) ALP 9212 PANEL ANTENNAS AT 150'
LOW PROFILE PLATFORM W/T-MOUNTS AT 150'
(12) ALP 9212 PANEL ANTENNAS AT 140'
LOW PROFILE PLATFORM W/T-MOUNTS AT 140'
(12) 7184.14 PANEL ANTENNAS AT 130'
LOW PROFILE PLATFORM W/T-MOUNTS AT 130'

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
85 MPH BASIC WIND SPEED
1/2" RADIAL ICE
CASE I - 85 MPH BASIC WIND SPEED
CASE II - 75% OF 85 MPH WIND LOAD WITH 1/2" RADIAL ICE

NOTE: IT IS THE RESPONSIBILITY OF THE PURCHASER TO VERIFY THAT THE WIND LOADS AND DESIGN CRITERIA SPECIFIED MEET THE REQUIREMENTS OF ALL LOCAL BUILDING CODES

ENGINEERED ENDEAVORS, INC.

7610 Jenther Drive • Mentor, Ohio 44060
Telephone: (440) 918-1101 • Telefax: (440) 918-1108

ENGINEERED ENDEAVORS INCORPORATED

Customer BECHTEL By JAY PARR 1/30/01 (Date)

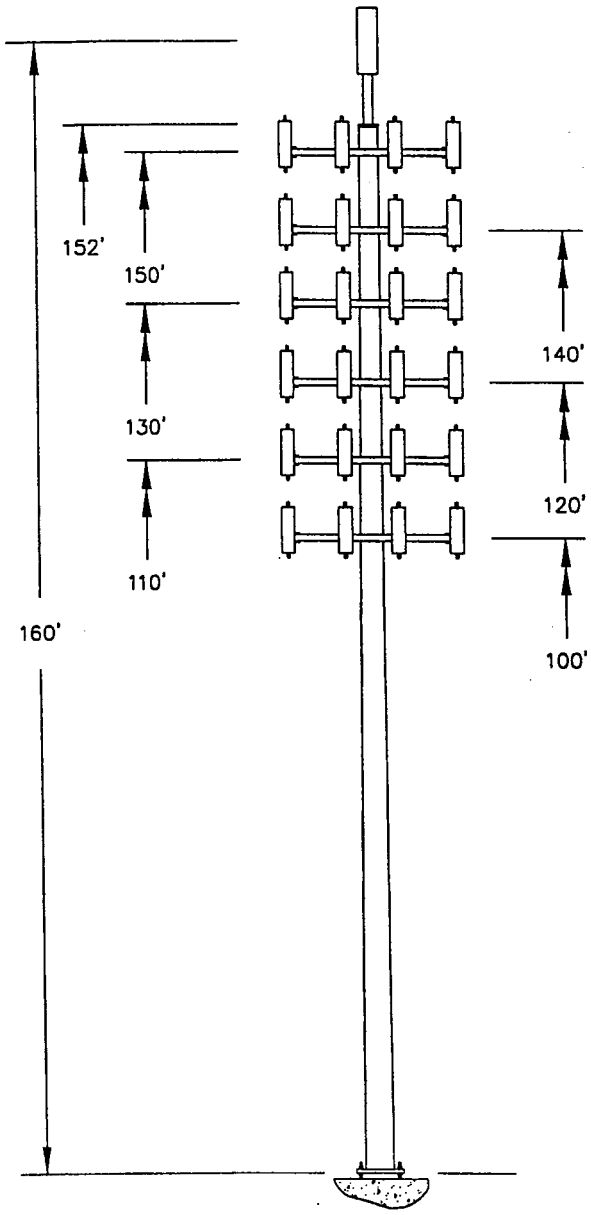
Structure 152' MONOPOLE Checked ____ 8238 (Job/Quote No.)

SITE LOCATION: FAIRFIELD COUNTY, CT

SITE NAME: NEWTOWN/CT-177

DESIGN LOADING

REVISION: II



ANTENNA LOADING:

(1) 19 in EMS AcCELLerator ANTENNA AT 160'

(1) 5 ft AcCELLerator STAND

(12) ALP 9212 PANEL ANTENNAS AT 150'

LOW PROFILE PLATFORM W/T-MOUNTS AT 150'

(12) ALP 9212 PANEL ANTENNAS AT 140'

LOW PROFILE PLATFORM W/T-MOUNTS AT 140'

(12) 7184.14 PANEL ANTENNAS AT 130'

LOW PROFILE PLATFORM W/T-MOUNTS AT 130'

(12) ALP 9212 PANEL ANTENNAS AT 120'

LOW PROFILE PLATFORM W/T-MOUNTS AT 120'

(12) ALP 9212 PANEL ANTENNAS AT 110'

LOW PROFILE PLATFORM W/T-MOUNTS AT 110'

(12) ALP 9212 PANEL ANTENNAS AT 100'

LOW PROFILE PLATFORM W/T-MOUNTS AT 100'

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F

85 MPH BASIC WIND SPEED

1/2" RADIAL ICE

CASE I - 85 MPH BASIC WIND SPEED

CASE II - 75% OF 85 MPH WIND LOAD WITH 1/2" RADIAL ICE

NOTE: IT IS THE RESPONSIBILITY OF THE PURCHASER TO VERIFY THAT THE WIND LOADS AND DESIGN CRITERIA SPECIFIED MEET THE REQUIREMENTS OF ALL LOCAL BUILDING CODES

ENGINEERED ENDEAVORS, INC.

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Telephone: (440) 918-1101 • Telefax: (440) 918-1108

Engineered Endeavors Inc.

7610 Jenther Drive
Mentor, Ohio 44060
Tel (440) 918-1101 Fax (440) 918-1108

Communications Structure Nonlinear Analysis and Design Program

16:47:34 01-30-2001
Revision 1.3 - 2/07/00
Engineer: PARR

Customer **BECHTEL**
Job Name **8238 REVISION II**
Structure **152' MONOPOLE**
Location **FAIRFIELD COUNTY, CT**
Site **NEWTOWN/CT-177**

OD BOT	OD TOP	NUM. SIDES	THICK INCH	TAPER IN/FT	LENGTH FT	JOINT INCH	JOINT TYPE	YIELD KSI	WEIGHT LBS	JOINT HEIGHT
31.88	17.25	18	0.2500	0.270	54.25	54.00	SLIP	65.0	3519.	100.00
44.70	30.04	18	0.3750	0.270	54.33	74.00	SLIP	65.0	8042.	51.00
56.75	42.16	18	0.4375	0.270	54.08	0.00	BASEPL	65.0	12374.	0.00
			TOTAL TUBE WEIGHT						23935.	POUNDS
			POLE SHAFT LENGTH						152.00	FEET

E = 29600.0 KSI
UNIT WGT = 0.283 LBS/CU IN
AISC constants are used for stress reductions.
TUBE SECTIONS HAVE 18 SIDES AND ARE TREATED AS ROUND
Internal bend radius = 3 X T
Tube diameters are measured flat to flat.
Tube diameters are increased by 1.020 for wind across points.
Drag coefficients are increase by 1.300 for steps on the pole.
AISC Tube Shape Coefficient of 1.000 is applied.
ORIGINAL DATA FILE NAME H:\JOBS\8238-152
REVISED DATA FILE NAME H:\JOBS\8238152A

APPURTENANCES

DESCRIPTION	NUM.	ELEV.	Kz	AREA	WGT	Ca	AREA	WGT	Ca	FACTOR
				< WITHOUT ICE >			< WITH ICE >			
ALP 9212-N	12	150.	1.541	3.90	27.	2.0000	4.24	55.	2.0000	0.75
LOW PROFILE PLATFORM	1	150.	1.541	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
ALP 9212-N	12	140.	1.511	3.90	27.	2.0000	4.24	55.	2.0000	0.75
LOW PROFILE PLATFORM	1	140.	1.511	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
7184.14	12	130.	1.480	1.96	10.	1.5000	2.36	25.	1.5000	0.88
LOW PROFILE PLATFORM	1	130.	1.480	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
ALP 9212-N	12	120.	1.446	3.90	27.	2.0000	4.24	55.	2.0000	0.75
LOW PROFILE PLATFORM	1	120.	1.446	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
ALP 9212-N	12	110.	1.411	3.90	27.	2.0000	4.24	55.	2.0000	0.75
LOW PROFILE PLATFORM	1	110.	1.411	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
ALP 9212-N	12	100.	1.373	3.90	27.	2.0000	4.24	55.	2.0000	0.75
LOW PROFILE PLATFORM	1	100.	1.373	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
19in ACCELLERATOR	1	160.	1.570	9.50	250.	0.8000	10.15	400.	0.8000	1.00
5' ARM (4" SQ. X 1/4	1	155.	1.556	1.67	67.	2.0000	2.08	134.	2.0000	1.00

LOAD CASE 1

BASIC LOADING

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 1.00 RADIAL ICE 0.00 IN.

WIND VELOCITY 85 BOTTOM 18.65 PSF TOP 28.80 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
ALP 9212-N	150.00	0.324	3.382
LOW PROFILE PLATFORM	150.00	1.500	1.084
ALP 9212-N	140.00	0.324	3.316
LOW PROFILE PLATFORM	140.00	1.500	1.063
7184.14	130.00	0.119	1.436
LOW PROFILE PLATFORM	130.00	1.500	1.041
ALP 9212-N	120.00	0.324	3.173
LOW PROFILE PLATFORM	120.00	1.500	1.017
ALP 9212-N	110.00	0.324	3.095
LOW PROFILE PLATFORM	110.00	1.500	0.992
ALP 9212-N	100.00	0.324	3.012
LOW PROFILE PLATFORM	100.00	1.500	0.965
19in ACCELLERATOR	160.00	0.250	0.373
5' ARM (4" SQ. X 1/4")	155.00	0.067	0.162

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
152.00	17.25	0.2500	0.63	3.46	0.30	0.02	0.74	51.99	0.01	108.6	6.70
150.00	17.79	0.2500	5.56	4.72	1.86	0.13	0.95	51.99	0.02	105.9	6.69
140.00	20.49	0.2500	5.56	60.00	1.86	0.12	9.06	51.99	0.18	92.1	6.56
130.00	23.18	0.2500	10.65	165.86	3.69	0.21	19.48	51.91	0.38	78.8	6.25
120.00	25.88	0.2500	13.85	303.65	5.67	0.28	28.52	50.30	0.57	66.3	5.80
110.00	28.58	0.2500	18.80	490.73	7.84	0.35	37.70	48.98	0.78	54.8	5.24
100.00	31.28	0.2500	23.63	726.13	10.21	0.42	46.47	47.90	0.98	44.5	4.59
TYPE OF JOINT: SLIP JOINT											
100.00	30.65	0.3750	28.51	726.12	13.72	0.38	32.67	51.99	0.63	44.5	4.59
87.00	34.16	0.3750	28.51	1095.72	13.72	0.34	39.55	51.99	0.77	33.0	3.93
75.00	37.39	0.3750	29.33	1446.95	15.69	0.36	43.45	50.83	0.86	23.9	3.29
63.00	40.63	0.3750	30.12	1807.94	17.76	0.37	45.87	49.68	0.93	16.4	2.65
51.00	43.87	0.3750	30.92	2178.67	19.99	0.39	47.33	48.70	0.98	10.5	2.04
TYPE OF JOINT: SLIP JOINT											
51.00	42.99	0.4375	31.72	2178.68	24.63	0.42	42.44	51.04	0.84	10.5	2.04
40.00	45.96	0.4375	31.72	2527.48	24.63	0.39	43.00	50.09	0.87	6.3	1.56
30.00	48.66	0.4375	32.37	2851.11	26.87	0.41	43.21	49.34	0.88	3.5	1.14
20.00	51.36	0.4375	32.98	3180.86	29.14	0.42	43.21	48.66	0.90	1.5	0.74
10.00	54.05	0.4375	33.60	3516.87	31.53	0.43	43.07	48.04	0.90	0.4	0.36
0.00	56.75	0.4375	34.68	3859.35	35.35	0.46	42.83	47.49	0.91	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	35.349	-34.679	3859.345	0.000	0.000

LOAD CASE 2

BASIC LOADING WITH ICE

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 0.75 RADIAL ICE 0.50 IN.

WIND VELOCITY 85 BOTTOM 13.99 PSF TOP 21.60 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
ALP 9212-N	150.00	0.660	2.758
LOW PROFILE PLATFORM	150.00	2.250	1.019
ALP 9212-N	140.00	0.660	2.704
LOW PROFILE PLATFORM	140.00	2.250	0.999
7184.14	130.00	0.295	1.297
LOW PROFILE PLATFORM	130.00	2.250	0.978
ALP 9212-N	120.00	0.660	2.587
LOW PROFILE PLATFORM	120.00	2.250	0.956
ALP 9212-N	110.00	0.660	2.524
LOW PROFILE PLATFORM	110.00	2.250	0.933
ALP 9212-N	100.00	0.660	2.456
LOW PROFILE PLATFORM	100.00	2.250	0.907
19in ACCELLERATOR	160.00	0.400	0.299
5' ARM (4" SQ. X 1/4")	155.00	0.134	0.152

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
152.00	17.25	0.2500	0.50	2.89	0.51	0.04	0.62	51.99	0.01	93.4	5.76
150.00	17.79	0.2500	4.80	3.85	3.33	0.24	0.77	51.99	0.02	91.0	5.76
140.00	20.49	0.2500	4.80	51.59	3.33	0.21	7.79	51.99	0.15	79.1	5.65
130.00	23.18	0.2500	9.18	142.98	6.40	0.36	16.79	51.91	0.33	67.6	5.38
120.00	25.88	0.2500	12.11	263.61	9.35	0.46	24.76	50.30	0.50	56.8	4.99
110.00	28.58	0.2500	16.32	426.24	12.70	0.57	32.74	48.98	0.68	46.9	4.50
100.00	31.28	0.2500	20.41	629.75	16.22	0.67	40.30	47.90	0.85	38.1	3.94
			TYPE OF JOINT: SLIP JOINT								
100.00	30.65	0.3750	24.49	629.76	20.86	0.58	28.33	51.99	0.56	38.1	3.94
87.00	34.16	0.3750	24.49	947.51	20.86	0.52	34.20	51.99	0.67	28.1	3.36
75.00	37.39	0.3750	25.05	1247.67	22.76	0.52	37.47	50.83	0.75	20.4	2.81
63.00	40.63	0.3750	25.59	1554.40	24.76	0.52	39.44	49.68	0.80	14.0	2.27
51.00	43.87	0.3750	26.12	1867.68	26.93	0.53	40.57	48.70	0.84	8.9	1.74
			TYPE OF JOINT: SLIP JOINT								
51.00	42.99	0.4375	26.67	1867.67	31.21	0.53	36.38	51.04	0.72	8.9	1.74
40.00	45.96	0.4375	26.67	2160.94	31.21	0.50	36.76	50.09	0.74	5.4	1.33
30.00	48.66	0.4375	27.11	2431.97	33.45	0.50	36.86	49.34	0.76	3.0	0.97
20.00	51.36	0.4375	27.52	2707.15	35.72	0.51	36.78	48.66	0.76	1.3	0.63
10.00	54.05	0.4375	27.94	2986.58	38.11	0.52	36.58	48.04	0.77	0.3	0.30
0.00	56.75	0.4375	28.71	3270.41	41.93	0.54	36.29	47.49	0.77	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	41.928	-28.712	3270.407	0.000	0.000

SUMMARY TABLE

ELEV	STRESS RATIO	AXIAL	BENDING	LOADING
152.00	0.01	0.30	3.5	1 BASIC LOADING
150.00	0.02	1.86	4.7	1 BASIC LOADING
140.00	0.18	1.86	60.0	1 BASIC LOADING
130.00	0.38	3.69	165.9	1 BASIC LOADING
120.00	0.57	5.67	303.6	1 BASIC LOADING
110.00	0.78	7.84	490.7	1 BASIC LOADING
100.00	0.98	10.21	726.1	1 BASIC LOADING
87.00	0.77	13.72	1095.7	1 BASIC LOADING
75.00	0.86	15.69	1446.9	1 BASIC LOADING
63.00	0.93	17.76	1807.9	1 BASIC LOADING
51.00	0.98	19.99	2178.7	1 BASIC LOADING
40.00	0.87	24.63	2527.5	1 BASIC LOADING
30.00	0.88	26.87	2851.1	1 BASIC LOADING
20.00	0.90	29.14	3180.9	1 BASIC LOADING
10.00	0.90	31.53	3516.9	1 BASIC LOADING
0.00	0.91	35.35	3859.3	1 BASIC LOADING

MAXIMUM SUPPORT MOMENT K-FT	3859.34
CORRESPONDING AXIAL FORCE KIPS	35.35
CORRESPONDING SHEAR FORCE KIPS	34.68

BASE PLATE AT ELEVATION 0.00 FEET

TUBE DIAMETER	56.75	INCHES
DESIGN MOMENT	3859.3	KIP FT
DESIGN MOMENT IS	0.	DEGREES FROM THE WIND DIRECTION
BOLTS ARE ON THE KNUCKLES OF THE TUBE		
APPLIED AXIAL FORCE	35.3	KIPS
APPLIED SHEAR	34.68	KIPS

BOLT DATA

BOLT TYPE	A615 GR75	
BOLTS ARE EVENLY SPACED		
DIAMETER	2.250	INCHES
EFFECTIVE AREA	3.250	SQ IN
TOTAL LENGTH	6.0	FEET
End plates are required.		
MINIMUM EMBEDMENT	9.2	FEET
NUMBER OF BOLTS	16	
BOLT CIRCLE DIAMETER	66.00	INCHES
ALLOWABLE STRESS	60.0	KSI
APPLIED AXIAL STRESS	54.7	KSI
MAX BOLT FORCE	177.6	KIPS
BOLT BENDING STRESS	3.1	KSI
COMBINED BOLT STRESS	57.8	KSI
CLEARANCE UNDER PLATE	3.25	INCHES
BOLT WEIGHT	1353.6	POUNDS

PLATE DATA

DIAMETER OF PLATE	72.00	INCHES
MATERIAL	A871 GR60	
PROVIDED THICKNESS	2.000	INCHES
REQUIRED THICKNESS	1.849	INCHES
BOLT HOLE DIAMETER	2.625	INCHES
CENTER HOLE SIZE	46.75	INCHES
NET WEIGHT	1283.9	POUNDS
RAW STOCK WEIGHT	2934.1	POUNDS
SURFACE AREA	31.51	SQ FT
ALLOWABLE STRESS	60.00	KSI
MAX APPLIED STRESS	51.29	KSI
CONCRETE STRENGTH	3000.	PSI

Base Plate - use 72.00 inch ROUND x 2.000 inch A871 GR60 with (16) 2.250 diameter x 6.00 foot caged A615 GR75 bolts on a 66.00 inch bolt circle. End plates are required.

ENGINEERED
ENDEAVORS
INCORPORATED

7610 Jenther Drive
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Phone: (440)918-1101
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DESIGN CALCULATIONS FOR A SPREAD FOOTER FOUNDATION

Bechtel Telecommunications

152 ft Monopole

Newtown/CT-177 Site
Fairfield County, Connecticut

EEI Project Number 8238
November 16, 2000

FOUNDATION DESIGN CALCULATIONS FOR A SPREAD FOOTER FOUNDATION

ENGINEERED ENDEAVORS INCORPORATED

ENGINEERED ENDEAVORS INCORPORATED
*7610 Jenther Drive * Mentor, Ohio 44060*
*Tel:(440)918-1101 * Fax:(440)918-1108*

CUSTOMER: BECHTEL TELECOMMUNICATIONS
STRUCTURE: 152' MONOPOLE
JOB NUMBER: 8238
LOCATION: FAIRFIELD COUNTY, CT
SITE NAME: NEWTOWN/CT-177

SERVICE LOADS AT BASE OF THE MONOPOLE

DESIGN LOADING	
MOMENT	3859.3 ft-kips
SHEAR	34.7 kips
AXIAL	35.3 kips

ANCHOR BOLTS

QUANTITY	16.0
LENGTH	6.0 ft
BOLT CIRCLE	66.0 in
PROJECTION	12.0 in

FOUNDATION PARAMETERS

MINIMUM PEDESTAL WIDTH	86.0 in
PEDESTAL PROJECTION	12.0 in
MINIMUM FOUNDATION HEIGHT	5.5 ft

	HEIGHT	WIDTH		
			SOIL UNIT WEIGHT	100 pcf
FOOTING	3.00 ft	23.00 ft	CONCRETE WEIGHT	150 pcf
PEDESTAL	6.00 ft	7.50 ft	ANGLE OF FRICTION	30 degrees

FOUNDATION WEIGHT	288.68 kips	
CONCRETE VOLUME	71.28 yds^3	
SOIL WEIGHT	308.33 kips	H= 5.00
TOTAL VERTICAL LOAD	632.30 kips	B= 28.77
KERN OF ECCENTRICITY	3.83 ft	
ACTUAL ECCENTRICITY	6.60 ft	
OVERTURNING MOMENT	4171.6 ft-kips	
RESISTING MOMENT	7271.5 ft-kips	
ALLOWABLE GROSS SOIL PRESSURE	0.0 ksf	
ALLOWABLE NET SOIL PRESSURE	4.0 ksf	

		GROSS	NET
SOIL PRESSURE	MAXIMUM q=	3.74 ksf	2.61 ksf
	MINIMUM q=	0.00 ksf	

SAFETY FACTOR **Sf = 1.74**

ULTIMATE STRENGTH DESIGN OF FOOTING

CONCRETE, psi	3000
STEEL, KSI	60

SHEAR IN FOOTING

1. CASE I -DEAD LOAD, TWO-WAY SHEAR — U= 1.4*D

Ultimate Vertical Load, kips	885.22	
Ultimate Pressure, ksf	1.67	
Ultimate shear V, kips	717.88	
Design shear Vn, kips	2681.65	O.K.

2. CASE II - WIND LOAD, ONE-WAY SHEAR — U=0.9*D+1.3*W

Ultimate Moment, kip-ft		5423.08	
Ultimate Vertical Load, kips		569.07	
Eccentricity, ft		9.53	
Ultimate Pressure, ksf	qult=	8.37	
Dist. from edge to critical sect., ft		5.25	
Pressure distance ft	c=	5.91	
Pressure @ critical section, ksf		0.94	
Ultimate Shear, kips		561.96	
Design Shear, kips		770.97	O.K.

FLEXURE STRENGTH DESIGN

Ultimate Moment, kip-ft		Case I	1155.84		
		Case II	3289.06	q1=	0.00
Coefficient of Resistance		Rn=	176.5		
Reinforcement Ratio		r=	0.00305		
Min. Reinforcement Ratio		r min	0.00180		
Min. Steel Area, sq.in.		A1	25.27		
Type of Bars		#	8		
		Ab,in^2=	0.79		
BOTTOM	Min. Number of Bars		31.99		
	Actual Number of Bars		33.00		
	Actual Steel Area, sq.in.		26.07		
	Steel Ratio Actual	ra=	0.00315		
	Revised Coef. of Resist	Rn=	188.90		
	Design Moment, kip-ft		3519.12		
	Horizontal Spacing, in	shor=	8.44		
TOP	Min. Steel Area, sq.in		14.90		
	Min. Number of Bars		18.87		
	Actual Number of Bars		19.00		
	Top Steel Area, sq.in		15.01		
	Horizontal Spacing, in	shor=	15.00		

PEDESTAL DESIGN

Pedestal Width, in		90	Ultim. Momen	5287.8
Concrete, ksi		3		
Reinforcement, ksi		60		
Rebars , #8	Q-ty	52	Area, sq.in	0.79
Design Rebars	Q-ty	12	Area, sq.in	3.42
Minimum reinforcement ratio		0.0050	Rebar space, i	4.83
Actual reinforcement ratio		0.0051		
Concrete cover , in		4.5		
Rebar layout radius, in		40.00		

Bending about the major axis

No.	Angle, deg	Coord., in	Edge Dist., in	No.	Angle, deg	Coord., in	dge Dist., in
1	0	40.00	5.00	7	180	-40.00	85.00
2	30	34.64	10.36	8	210	-34.64	79.64
3	60	20.00	25.00	9	240	-20.00	65.00
4	90	0.00	45.00	10	270	0.00	45.00
5	120	-20.00	65.00	11	300	20.00	25.00
6	150	-34.64	79.64	12	330	34.64	10.36

Location of neutral axis c=, 9.206

Compression zone, a= 7.83

		No.	e	Force *kips*
		1	0.0014	127.34
eu=	0.003			
	Concrete, kips			1795.86
	Total compression			**1923.20**

Tension zone		No.	e	Force *kips*
		2	0.0004	37.30
		3	0.0051	205.40
ey=	0.00207	4	0.0117	205.40
		5	0.0182	205.40
		6	0.0230	205.40
		7	0.0247	205.40
		8	0.0230	205.40
		9	0.0182	205.40
		10	0.0117	205.40
		11	0.0051	205.40
		12	0.0004	37.30
	Total tension, kips			**1923.20**

Moment due to compression

Rebars	Force *kips*	Mom. Arm. *in*	Moment *k-ft*
1	127.34	40.00	424.47
2	0.00	34.64	0.00
12	0.00	34.64	0.00
Concrete	1795.86	41.09	6148.94
Total in compressio			**6573.42**

Moment due to tension

Rebars	Force *kips*	Mom. Arm *in*	Moment *k-ft*
2	37.30	34.64	-107.68
3	205.40	20.00	-342.33
4	205.40	0.00	0.00
5	205.40	-20.00	342.33
6	205.40	-34.64	592.94
7	205.40	-40.00	684.67
8	205.40	-34.64	592.94
9	205.40	-20.00	342.33
10	205.40	0.00	0.00
11	205.40	20.00	-342.33
12	37.30	34.64	-107.68
Total in tension			**1655.19**

Design moment about the major axis, kip 7405.74

Bending about the diagonal

No.	Angle, deg phi	Coord., in c1	Edge Dist., in di
1	0	40.00	23.64
2	30	34.64	29.00
3	60	20.00	43.64
4	90	0.00	63.64
5	120	-20.00	83.64
6	150	-34.64	98.28

No.	Angle, deg phi	Coord., in c1	dge Dist., in di
7	180	-40.00	103.64
8	210	-34.64	98.28
9	240	-20.00	83.64
10	270	0.00	63.64
11	300	20.00	43.64
12	330	34.64	29.00

Location of neutral axis c=, **29.86**

Compression zone, a= **25.38**

		No.	e	Force kips
		1	0.000624955	53.31
eu=	0.003	2	8.65445E-05	8.59
		12	8.65445E-05	8.59
	Concrete, kips			1642.70
	Total compression			**1713.20**

Tension zone		No.	e	Force kips
		2		
		3	0.0014	137.44
ey=	0.00207	4	0.0034	205.40
		5	0.0054	205.40
		6	0.0069	205.40
		7	0.0074	205.40
		8	0.0069	205.40
		9	0.0054	205.40
		10	0.0034	205.40
		11	0.0014	137.44
		12		
	Total tension, kips			**1712.7**

Moment due to compression

Rebars	Force kips	Mom. Arm. in	Moment k-ft
1	53.31	40.00	177.71
2	8.59	34.64	24.80
12	8.59	34.64	24.80
Concrete	1642.70	55.18	7553.57
Total in compressio			**7780.89**

Moment due to tension

Rebars	Force kips	Mom. Arm in	Moment k-ft
3	137.44	20.00	-229.07
4	205.40	20.00	-342.33
5	205.40	0.00	0.00
6	205.40	-20.00	342.33
7	205.40	-40.00	684.67
8	205.40	-34.64	592.94
9	205.40	-20.00	342.33
10	205.40	0.00	0.00
11	137.44	20.00	-229.07
Total in tension			**1161.80**

Design Moment, kip-ft **8048.42**

Pedestal Design Moment, kip-ft **7405.74**