STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

December 13, 1999

Peter W. van Wilgen, Director – Real Estate Operations
SNET Wireless, Inc.
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: TS-SCLP-013-990317 - Springwich Cellular Limited Partnership request for an order to approve tower sharing at an existing telecommunications facility located off 3 Polly Lane in Bozrah, Connecticut.

Dear Mr. van Wilgen:

At a public meeting held December 8, 1999, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility as reconfigured to avoid the unnecessary proliferation of tower structures.

This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. 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 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.

The proposed shared use is to be implemented as specified in your letter dated November 15, 1999 concerning relocation of antennas from the 160-foot level to the 195-foot level of this existing tower, in additional information dated November 24, 1999, and in a letter dated December 7, 1999 concerning tower sharing for Sprint PCS antennas.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/SLL/sll
cc: Honorable Raymond C. Barber, First Selectman, Town of Bozrah
Steve Kotfila, Site Development Manager, Sprint PCS
Ronald C. Clark, Manager – Real Estate, Nextel Communications
J. Brendan Sharkey, Esq., Omnipoint Communications

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HURWITZ & SAGARIN LLC

December 7, 1999

Via Facsimile and Overnight Delivery

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

RE: Sprint co-location on CDT telecommunications tower located at 2 Polly Lane, Bozrah, Connecticut.

Dear Chairman Gelston:

Sprint Spectrum L.P. ("Sprint PCS") entered into a lease agreement with Cordless Data Transfer, Inc. ("CDT") to install antennas and related base station equipment on the existing telecommunications tower located at 2 Polly Lane, Bozrah, Connecticut ("Facility"). The Facility is located on property owned by Alice Maynard and is operated and managed by CDT. CDT received zoning approval from the Town of Bozrah ("Town") for the construction of the Facility on October 9, 1997. In accordance with its policy of co-location whenever possible, Sprint PCS sought to co-locate on the Facility, rather than construct a new telecommunications tower in this area.

Sprint PCS supplied the Town with its site plans and information regarding its proposed installation. Sprint PCS received a building permit for its proposed co-location on May 6, 1999 and subsequently installed its antennas and base station equipment in accordance with this permit. A copy of the building permit is attached hereto.

It has been brought to my attention that Springwich Cellular Limited Partnership received approval from the Connecticut Siting Council ("Council") on April 6, 1999 to co-locate on the Facility. At the time Sprint PCS received the Town's approval to co-locate on the Facility, Springwich was not yet located on the Facility and Sprint PCS was unaware that Springwich had received approval from the Council a month earlier. As a result, Sprint PCS hereby submits its power density calculations for this installation and requests that the Council approve its co-location on this Facility. Sprint PCS respectfully submits that its co-location on this Facility is technically, legally, environmentally, and economically feasible and is in compliance with the provisions of C.G.S. §16-50aa. Further, Sprint PCS represents that, in compliance with the provisions of R.C.S.A. § 16-50j-72(b)(2), the Sprint PCS co-location on this Facility has not increased the existing height of the tower, extended the boundaries of the site, increased the noise level at the site by six decibels, or increased the radio frequency electromagnetic radiation to or above the applicable standard.

LAW OFFICES
147 North Broad Street, P.O. Box 112, Milford, Connecticut 06460-0112 Tel. 203-877-8000 • Fax 203-878-9800

Please contact me if I can provide you with any further information or documentation.

Very truly yours,

JULIE M. CASHIN, ESQ.
JMC/dsw
Enclosure

cc: Joel Rinebold, Executive Director, Connecticut Siting Council
Steve Levine, Staff Analyst, Connecticut Siting Council
Michelle Briggs, SNET
William McElwaine

Zone: L - 80

TOWN OF BOZRAH

Building Permit Record Date: 5-6-99

ALICE MAYNARD

Owner: Sprint Spectrum LP, 9 Barns Ind Rd Wallingford, CT 06492

Address: 2 Polly Lane, Bozrah

DESCRIPTION RESIDENTIAL ☐ COMMERCIAL ☐ INDUSTRIAL ☐ OTHER ☒

New: Addition: Accessory: Remodel: Alteration: Improvements: Other:

Radio Communications Equipment Installation on existing tower owned by Cordless Data Transfer.

Class: U	Flooring:		Lot No.:
		Tile Bath:	Lot Size:
Tv		Walls:	Set Back:
	Int. Walls:	Shower:	Side Yard:
No. of Rms:		Floors:	Back Yard:
No. of Stories:	Electrical:		Sub-Div.:
		Heating:	
Floor Area:		Wa. Htg:	Hot Water Supply
	No. of Bathrooms:	Stm. Htg:	
Foundation:		H. W. Htg:	Fireplace:
	No. of Toilet Rms.:	Space Htg:	
Construction: CONCRETE SLAB			City Water:
	Plumbing Fixtures:		Well Water:
Ext. Walls:	Sink:	**Fuel:**	
PREFAB EQUIP	Toilets:	Oil:	Septic:
BUILDING	Basins:	Gas:	Sewer:
Roofing:	Bathtubs:	Elec.:	
	Shrstall:		
Basement:		Air Cond.:	

Architect: NATCOM LLC	Est. Cost: 25,000
Address: 63-2 N. Branford Rd. Branford, CT 06405	Sewerage Permit Fee:
F :: Cordless Data Transfer, Inc 860-745-0445	Building Permit Fee: $200.00
Address: 17 Ridgewood Drive, Marlborough, CT 06447	Trade Permit Fee:
Applicant's Signature: President CDT	
Issued by Building Inspector:	Total: $200.00

CT33XC570 - Bozrah

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

Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm2)	Maximum Permissable Exposure*	%MPE
1962.5	11	397	4367	150	0	0.069872	1	6.9872%
1962.5	11	397	4367	150	50	0.062885	1	6.2885%
1962.5	11	397	4367	150	100	0.048373	1	4.8373%
1962.5	11	397	4367	150	150	0.034936	1	3.4936%
1962.5	11	397	4367	150	200	0.025154	1	2.5154%
1962.5	11	397	4367	150	250	0.018496	1	1.8496%
1962.5	11	397	4367	150	300	0.013974	1	1.3974%
1962.5	11	397	4367	150	350	0.010842	1	1.0842%
1962.5	11	397	4367	150	400	0.008614	1	0.8614%
1962.5	11	397	4367	150	450	0.006987	1	0.6987%
1962.5	11	397	4367	150	500	0.005769	1	0.5769%

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

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

Peter W. van Wilgen
Director - Real Estate Operations

November 24, 1999

RECEIVED
NOV 24 1999
CONNECTICUT
SITING COUNCIL

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

Re. Springwich Cellular Limited Partnership – Bozrah
Cellular Communications Site – Additional Information

Dear Mr. Rinebold:

At the request of Siting Analyst Steve Levine, the following additional information is provided to supplement SCLP's November 16, 1999 amended Bozrah cell site filing.

SCLP's original filing of March 17, 1999 listed only the power density calculations for Omnipoint, Nextel and SCLP. At the time of the original filing, these were the only carriers proposed for this site. Sometime between March 17, 1999 and November 16, 1999, Sprint PCS also located on the tower. SCLP amended its original filing, but forgot to include the information for Sprint PCS. Please see the attached corrected power density table, which includes SCLP and all other existing carriers.

The height of the actual tower is 180 feet, not including the platform for Omnipoint, which is located on the top of the tower. Thus, the top of the Omnipoint antennas are at approximately 186 feet.

At the time SCLP was ready to begin construction for this site, it was discovered that a tower-guying mount had been located at the height of SCLP's proposed antenna placement. (SCLP's November 16, 1999 Amendment addressed this situation.)

Still desiring to use the existing tower, SCLP researched attaching its antennas outboard of the guying mount, however the additional width and weight of the mounting hardware and antennas placed too much wind loading and structural

strain on the tower. SCLP also investigated placing its antennas above the guying mount, however SCLP's antennas would then be located too close to those of Nextel and could cause interference to both carriers.

SCLP looked at mounting just below the guying mount, but the physical guy wires were in way of the antenna beams and would cause signal interference. Locating SCLP's antennas below the Sprint antennas at the 140 foot level reduced the coverage received from this location and made the site uneconomical and unacceptable to use.

Thus, the only other alternative was to place an antenna cluster mount at the top of the tower, bringing the total height to the top of the SCLP antennas to approximately 196 feet. The width of the mounting pipe will be 4 inches in diameter, and the amount of exposed pipe between the top of the Omnipoint antennas and the bottom of SCLP's antennas would be approximately 5 feet. The overall diameter of the proposed pipe mount, with the SCLP antennas and mounting hardware, would be approximately 34 inches. In contrast, the platform holding Omnipoint's antennas is approximately ten feet across. This addition has been approved by the Town of Bozrah.

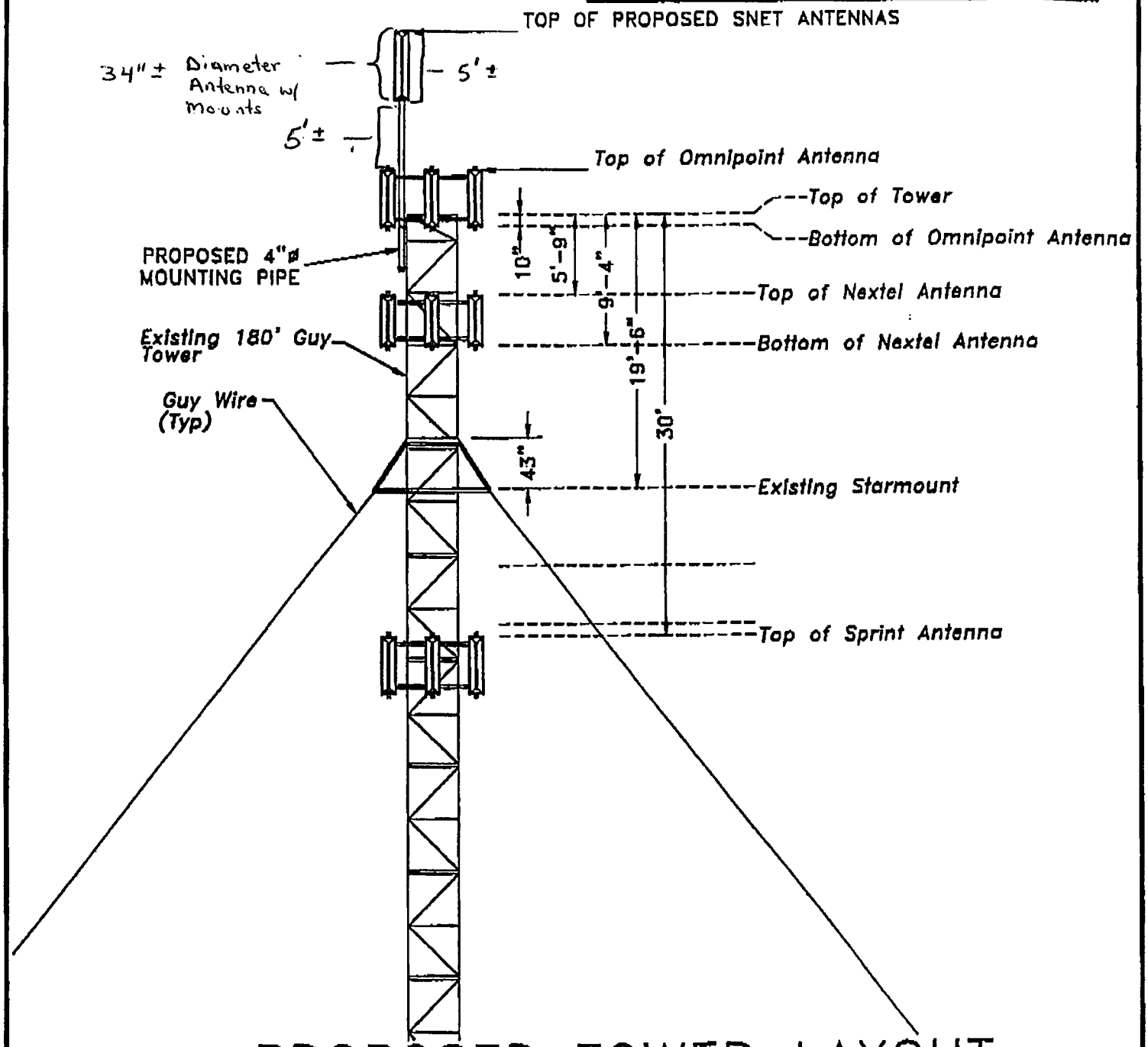
Thank you for your cooperation and understanding in this matter.

Very truly yours,

FREQUENCY	POWER DENSITY	HEIGHT	ANSI/IEEE STANDARD LIMITS (mW/cm2)	% OF MPE
Omnipoint 1945	.0111	181'	1.0000	1.11
SCLP 880-894	0.0290	195'	0.5867	3.32
Sprint	0.0245	147'	1.0000	2.45
Nextel 851	0.0228	175'	0.5673	4.02
TOTAL	**N/A**		**N/A**	**10.90**

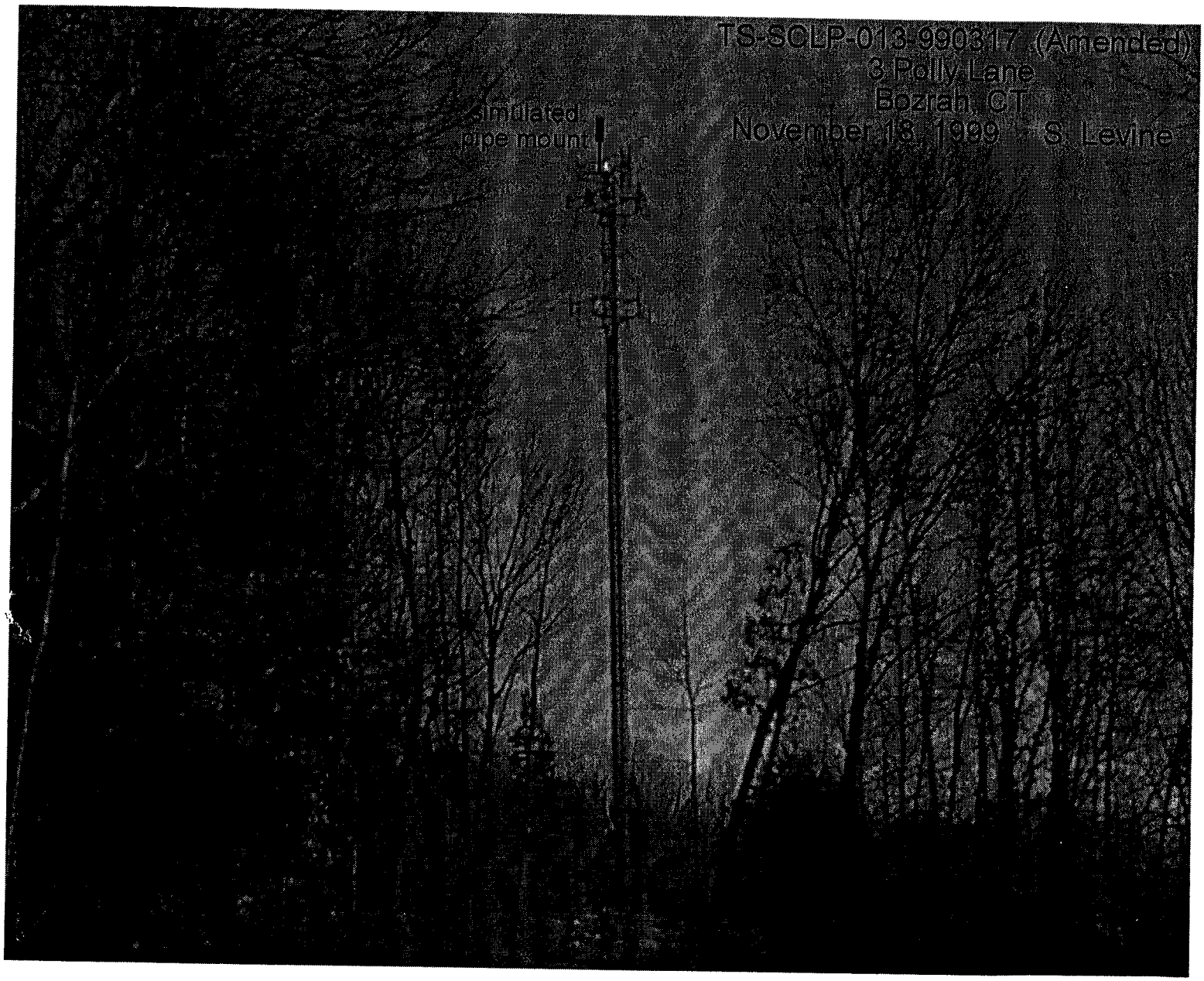
RAD. CENTER: 194.5± FT. (AGL)

BASED ON INFORMATION PROVIDED BY ED BADON (SNET MOBILITY)



PROPOSED TOWER LAYOUT

SNET MOBILITY PRELIMINARY DESIGN EXHIBIT	NORTH	SITE NAME: CDT-BOZRAH	SNET #:
		ADDRESS: POLLY LANE BOZRAH, CT	MGI #: 14777
			TASK #: 2122
			DATE: 11/5/99
Maguire Group Inc. Architects·Engineers·Planners One Court Street New Britain, Connecticut 06051		DRAWN: GMP / CHECKED: RGT / SCALE: 1"=10'	SNET
		THIS DRAWING AND ALL DATA CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION USE. ALL DATA SHOULD BE VERIFIED	


TS-SCLP-013-990317 (Amended)
3 Polly Lane
Bozrah, CT
November 18, 1999 S. Levine
simulated
pipe mount

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

November 15, 1999

Peter W. van Wilgen
Director - Real Estate Operations

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

RE: Springwich Cellular Limited Partnership—Bozrah Cellular Communication Site-Amended Filing

Dear Chairman Gelston:

On April 6, 1999, Springwich Cellular Limited Partnership (SCLP) received Connecticut Siting Council (Council) approval for tower sharing at the tower facility owned by Mrs. Alice Maynard of Colchester, Connecticut, and constructed, managed, and operated by Cordless Data Transfer, Inc. (CDT) of Marlborough, Connecticut.

SCLP has discovered that, upon construction of the tower, a guyed wire brace was installed at the original level approved for SCLP's antennas, and has prevented SCLP from placing their antennas in that location.

SCLP has negotiated a new agreement with CDT to install its antennas a the top of the tower , as shown on the attached tower profile. The tower manufacturer has conducted a structural analysis and approved the new antenna location (see attached). CDT has contacted the Town of Bozrah regarding the new location of SCLP's antennas and has received a letter stating that the new location is agreeable to the Town (see letter attached).

The operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to a level at or above the ANSI standard. The following table summarizes the power densities at the site from the various sources on the tower (including SCLP's revised antenna height) in relation to the standard.

FREQUENCY	POWER DENSITY	HEIGHT	ANSI/IEEE STANDARD LIMITS (mW/cm2)	% OF MPE
Omnipoint 1945	.0111	181'	1.0000	1.11
SCLP 880-894	0.0290	195'	0.5867	3.32
Nextel 851	0.0228	175'	0.5673	4.02
TOTAL	**N/A**		**N/A**	**8.45**

As the table demonstrates, SCLP's proposed antennas would contribute 3.32% of the ANSI standard for the cellular frequency range, bringing the site total to 8.45% of the standard as calculated for a mixed frequency site.

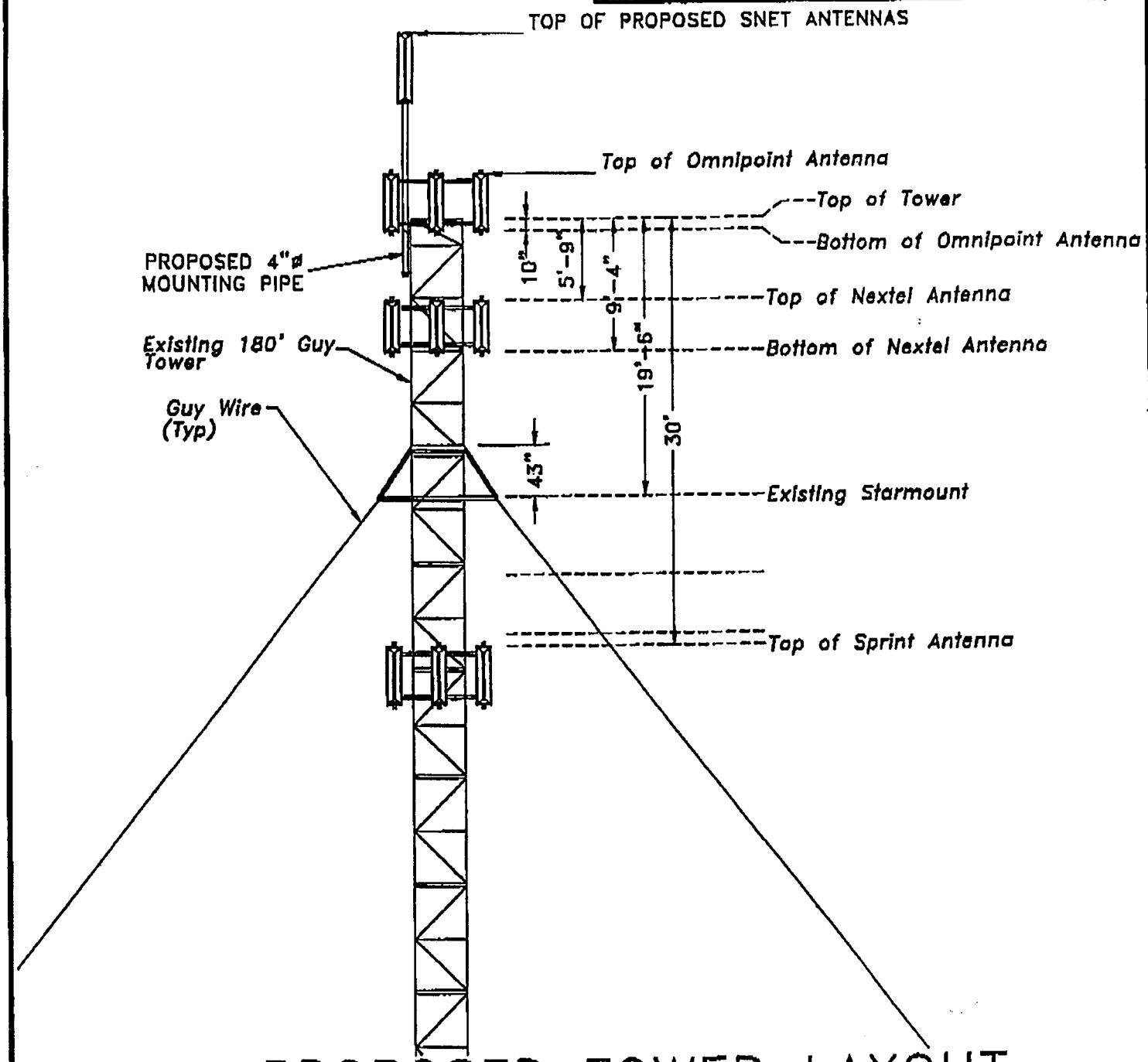
SCLP submits that the proposed additions will not cause a significant change or alteration in the physical and environmental characteristics of the site and comply with R.C.S.A. Section 16-50aa. SCLP therefore requests that the Council acknowledge that the new location of the antennas and equipment on the existing tower do not constitute a substantial environmental effect under R.C.S.A. Section 16-50aa, and that the requested tower sharing be re-approved.

Thank you for your consideration.

Sincerely,

RAD. CENTER: 194.5± FT. (AGL)

BASED ON INFORMATION PROVIDED BY ED BADON (SNET MOBILITY)



PROPOSED TOWER LAYOUT

SNET MOBILITY PRELIMINARY DESIGN EXHIBIT	NORTH	SITE NAME: CDT-BOZRAH	SNET #:
		ADDRESS: POLLY LANE BOZRAH, CT	MGI #: 14777
			TASK #: 2122
		DRAWN: GMP / CHECKED: RGT / SCALE: 1"=10'	DATE: 11/5/99
Maguire Group Inc. Architects·Engineers·Planners One Court Street New Britain, Connecticut 06051		THIS DRAWING AND ALL DATA CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION USE. ALL DATA SHOULD BE VERIFIED	SNET

FRED A. NUDD CORPORATION

1743 ROUTE 104, BOX 577
ONTARIO, NY 14519
(315) 524 -2531 FAX (315) 524-4249

www.nuddtowers.com

October 12, 1999

Ken Lee
SNET MOBILITY
500 Enterprise Dr., 3rd Floor
Rocky Hill, CT 06067

Ken,

We have completed the analysis of the CDT – Bozrah tower and have found it adequate within the scope of this analysis to support the proposed antenna loading. The analysis was performed using 85 mph wind speed with 1/2" radial ice per EIA/TIA 222-F recommended standard.

The tower we analyzed is a 185' Nudd G42WPAR guyed supporting tower consisting of pipe legs and angle/rod bracing. Tower sections are all-welded with a face dimension of 42". Foundation capacities were predicated on original design criteria.

The antenna loading used in the analysis consisted of the existing antennas as well as the following antenna configuration:

QTY	Antenna	Elev.	T-Line	Status
3	EMS RS90-10	192	(9) 1-1/4" Heliax	SNET Proposed

The results of the analysis showed all tower and foundation elements to be loaded within acceptable limits. Note that the antenna mounting pipe to be used is 4" Sch.40 pipe.

If you have any questions concerning this analysis, please contact me.

Sincerely,

FRED A. NUDD CORPORATION

Patrick Botimer
Engineer

Telephone (860) 889-2689

OFFICE OF THE FIRST SELECTMAN
TOWN OF BOZRAH
TOWN HALL
1 RIVER ROAD
BOZRAH, CONN. 06334

OCTOBER 22, 1999

TO WHOM IT MAY CONCERN:

PLEASE BE ADVISED THAT THE TOWN OF BOZRAH HAS BEEN INFORMED THAT A NEW ANTENNA WILL BE INSTALLED ON THE TOWER ON POLLY LANE.

THIS ANTENNA, WHICH WILL BE INSTALLED BY SNET WIRELESS, WILL BRING THE TOTAL HEIGHT OF THIS TOWER TO 196 FEET.

THE TOWN OF BOZRAH HAS NO PROBLEM WITH THIS NEW HEIGHT.

VERY TRULY YOURS,

RCB:kg

RAYMOND C. BARBER
FIRST SELECTMAN
TOWN OF BOZRAH

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

April 7, 1999

Peter van Wilgen
SNET Mobility Inc.
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **TS-SCLP-013-990317** - Springwich Cellular Limited Partnership request for an order to approve tower sharing at an existing telecommunications facility located off 3 Polly Lane in Bozrah, Connecticut.

Dear Mr. van Wilgen:

At a public meeting held April 6,1999, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures.

This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. 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 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letter dated March 17, 1999, and additional information provided on April 6, 1999. Please notify the Council when all work is complete.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/kj

c: Honorable Raymond Barber, First Selectman, Town of Bozrah

I:\siting\em\springwich\bozrah\dc040699.doc

FRED A. NUDD CORPORATION • 1743 ROUTE 104 • BOX 577 • ONTARIO, NEW YORK 14519 • (315) 524-2531 • FAX (315) 524-4249

RECEIVED
APR - 6 1999
CONNECTICUT
SITING COUNCIL

Design of
180' Guyed Tower

MODEL #: G42WPAR

PROJECT #: 5463

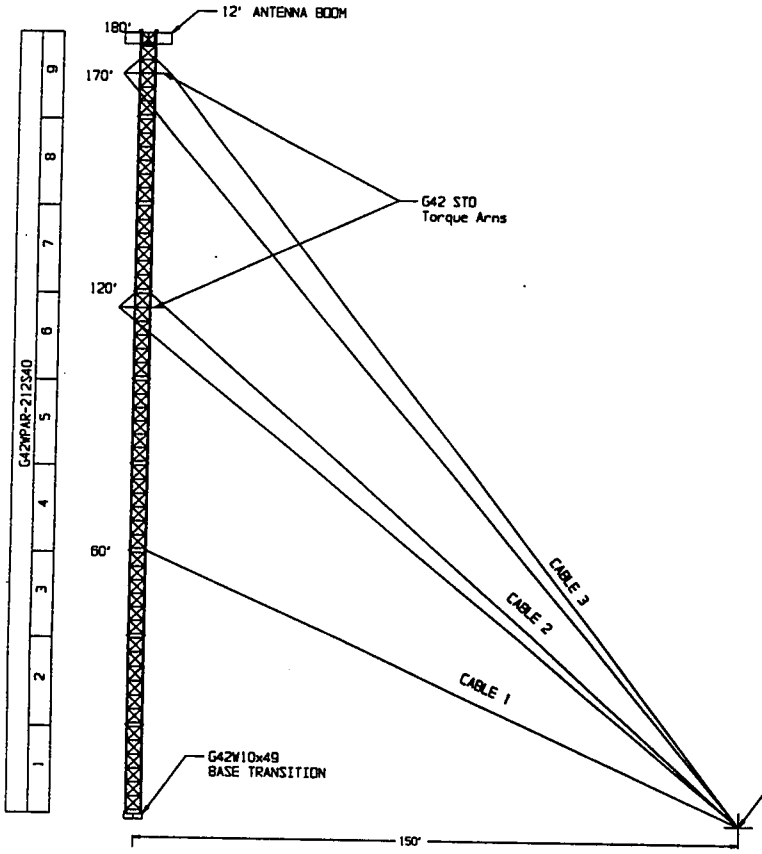
LOCATED IN: Bozrah, CT

for

CDT
PO BOX 363
Marlborough, CT 06447

November, 1997

STATE OF CONNECTICUT
GEORGE R. DEGRAFF
No. 15005
LICENSED
PROFESSIONAL ENGINEER



TOWER DESIGN CONDITIONS
This tower was designed to resist 85 mph wind speed with 1/2" radial ice per ANSI/EIA/TIA 222-E recommended standard.
Worst case load condition is wind without ice.
Allowable steel stresses per AISC ASD 9th Edition
Allowable concrete stresses per ACI 318-89.

MATERIAL SPECIFICATIONS

Tower Legs:	ASTM A36 Modified, Fy > XX ksi. See Section Schedule.
Guy Anchors:	ASTM A36 Modified, Fy > XX ksi
All other steel:	ASTM A36, Fy > 36 ksi
Guy Cable:	Extra High Strength grade
Hardware:	A325 Hot Dipped Galvanized Bolts with Anco Nuts
Galvanizing:	ASTM A123

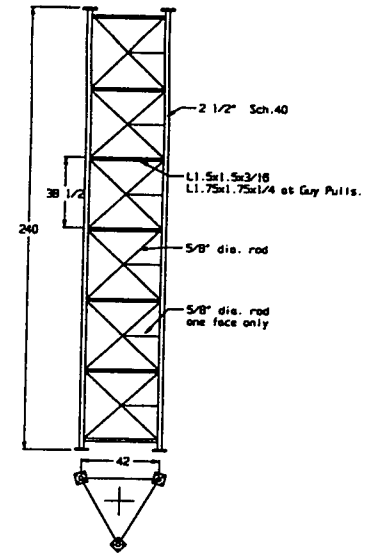
TOWER LOADING CONDITIONS

QTY	Antenna	Elevation	Windload	Deadload
3	12' Cellular Boom	178	292	170
9	Sinclair SRL 411C9R130	178	393	80
10	PD 10017	180	241	25
3	12' Cellular Boom	170	288	170
9	ALP 9212	170	124	27
3	12' Cellular Boom	160	283	170
9	Sinclair SRL 411C9R130	160	380	80
3	12' Cellular Boom	150	278	170
9	ALP 9212	150	119	27
1	6' MHP Dish	140	837	814
1	6' MHP Dish	130	837	814
1	6' MHP Dish	120	837	814
1	G42 Torque Arm	170	537	262
1	G42 Torque Arm	120	486	262

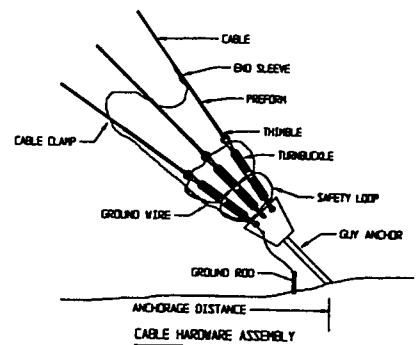
QTY	Type		Elevation Start	Elevation Stop	Windload #/ft	Deadload #/ft
19	LDF7-50A	1-5/8"	0	180	0.00	2.40
9	LDF7-50A	1-5/8"	0	170	0.00	2.40
9	LDF7-50A	1-5/8"	0	160	0.00	2.40
9	LDF7-50A	1-5/8"	0	150	0.00	2.40
1	LDF7-50A	1-5/8"	0	140	0.00	2.40
1	LDF7-50A	1-5/8"	0	130	0.00	2.40
1	LDF7-50A	1-5/8"	0	120	0.00	2.40
1	Tower Span 1		0	60	155.00	51.90
1	Tower Span 2		60	120	207.00	51.90
1	Tower Span 3		120	180	239.00	51.90

NOTE: Any deviation from the proposed design antenna loading will require a tower analysis for verification of structural integrity.

Initial Installation:
Tower: Full Height/Partial Sections??
Antenna: 15'??
@42"



G42WPAR TOWER SECTION



CABLE HARDWARE ASSEMBLY

NOTE: Install cable hardware per manufacturer's specifications.

INSTALLATION NOTES
1. Installation of tower must be performed by a qualified tower erector.
2. Install sections with section number on the bottom, and climbing device is aligned.
3. Install safety climb, lights, cable attachments per manufacturer's recommendations.
4. Do not lift more than 100' of assembled tower sections.
5. Install "sharp" edge of adapter plates against face of tower.
6. Plumb and tension tower and cables as erected.
7. "Ti"=Initial tension of cable.

G42 Section Weights: 785/685 +/-
Top Frame: 1000 +/-

SECTION DESIGNATION:
G42WPAR-212SS5 = 2-1/2"; (212), (S)Sch.40/(EH)Sch.80, (55)ksi strength
96-47-xx = Year-(47) ksi strength-xx

GUY CABLE SCHEDULE

CABLE:	QTY/Type	Length	Ti	Turnbuckle	Preform	Thmbl	Endsive	Shckl
Cable 3:	2 @ 5/8x7 EHS	224'	4240#	1"x18" J-J	5/8" BG	3/4"	65268	3/4"
Cable 2:	2 @ 9/16x7 EHS	189'	3500#	7/8"x12" J-J	9/16" BG	5/8"	65267	3/4"
Cable 1:	1 @ 9/16x7 EHS	157'	3500#	7/8"x12" J-J	9/16" BG	5/8"	65267	3/4"

NOTE: Cable lengths assume anchors at elevation 0'.
Cable lengths and anchor layout must compensate for site topography.

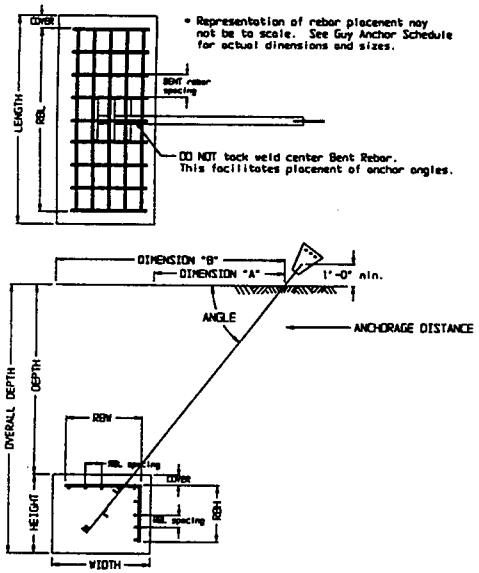
FRED A. NUDD CORPORATION
Route 104-Ontario, New York 14519-315/524-2531

SCALE: N/S
DATE: 11/03/97
DRAWN BY: ELR
APPROVED BY:
THIS DRAWING IS THE PROPERTY OF THE FRED A. NUDD CORPORATION AND IS NOT TO BE REPRODUCED IN WHOLE OR IN PART OR ANY USE WITHOUT FORMAL WRITTEN PERMISSION BY THE FRED A. NUDD CORPORATION.

180' G42WPAR TOWER

COT
BOZRAH, CT

DRAWING NUMBER: 97-5463-1



GUY ANCHOR PLAN AND ELEVATION VIEWS

This guy anchor foundation conforms to ANSI/EIA 222-E recommended standard.

DIMENSION	INNER GUY ANCHOR
Guy Anchor ID:	GA6-115-15
Bar Dimensions:	1 @ 1.75" HRR Fy=48000
Design Loads:	
Vertical:	54.9 kip
Horizontal:	81.1 kip
Resultant:	82.1 kip
Safety Factor:	2.13
Anchor Dimensions	
Anchor distance:	145 ft
Length:	11'- 8"
Width:	5'- 8"
Height:	2'- 0"
Depth:	8'- 0"
Overall Depth:	8'- 0"
Dimension "A"	6'- 11"
Dimension "B"	12'- 5"
Angle:	41.9.
Long Rebar RBL:	121" 12+1 pcs
RBL Vert. spacing:	4"
RBL Hori. spacing:	7"
Bent Rebar DAL:	88" 12+2 pcs
Bent Rebar RBH:	12"
Bent Rebar RBW:	58"
Bent Rebar Spacing:	11"
Design Cover:	8"
Rebar Size:	#4 Bar
Concrete Volume:	3 @ 4.7 cu yds
Total Concrete:	14.1 cu yds

NOTE: *Install the extra one long rebar inside the bottom angle of the guy anchor.
*Field tie the 2 extra bent rebar.
*Rebar QTY's for one anchor only

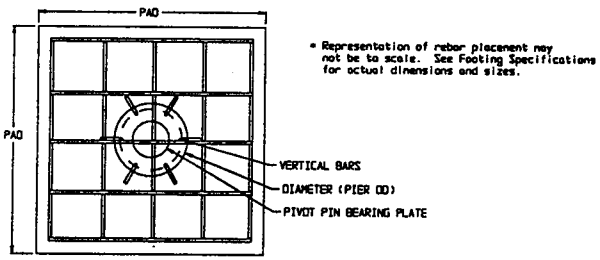
CONCRETE SPECIFICATIONS

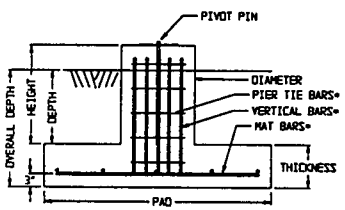
1. Concrete shall have a minimum compressive strength of at least 3000 psi at 28 days. It is our recommendation that 4000 psi concrete be installed to account for any unknown installation variables that could degrade the concrete.
2. Concrete installation shall meet ACI 318-89 installation requirements for reinforced concrete.
3. All concrete shall be placed against undisturbed soil free of water and all foreign objects and materials.
4. Minimum concrete cover shall be 3" over all reinforcing bars.
5. Reinforcing bars shall be ASTM A-615 Grade 60 deformed bars.
7. Assemble bars with tie wires or weld. Welding of bars must conform to AWS/ANSI D1.4-92 specifications. Structural weld splices on bars must be inspected by a Fred A. Nudd engineer.
8. Chamfer all sharp corners of exposed concrete.

SOIL SPECIFICATIONS

Soil is assumed to be per boring logs by XXXX dated XXXXXX.

1. Per customer specification soil is assumed to be EIA normal soil.
2. All foundations shall be free of free standing water as far as possible prior to pouring concrete and shall be kept thus until backfill is in place. If not possible, special pouring procedures must be followed.
3. Rock, non-cohesive, saturated or submerged soils are not to be considered as normal soil. See EIA 7.2.2.
4. Backfill shall be compacted to 100 pcf in 8" lifts using excavated material.
5. Backfill shall be placed so as to prevent accumulation of water around foundations or anchors.





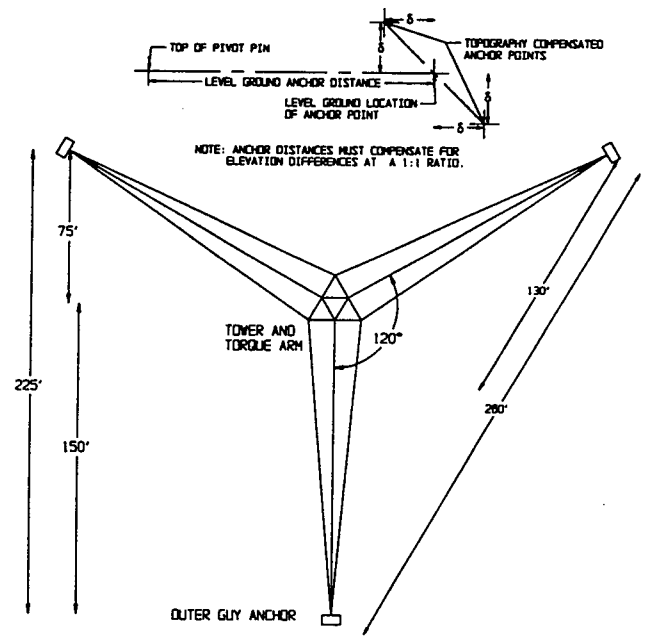
PAD & PIER PLAN & ELEVATION VIEW

PIER SPECIFICATIONS

Diameter:	2'-0"
Pad:	5'-8"
Depth:	3'-0"
Height:	4'-0"
Thickness:	1'-6"
Overall Depth:	4'-6"
Pier Tie Bars:	#4 @ 10" c-c, 18"DIAM, 57+2" cut length
Vertical Bars:	8-#5 @ 82" DAL w. 6" bent leg.
V. Bar Spacing:	4.02"
Pad Bars:	10-#5 bars, 54" DAL, 13.50" spacing 5 bars crossed each way.

DESIGN LOADS

Volume:	2.0 cu. yd.
Download:	118 kip
Shear:	3.602 kip



TOWER PLOT PLAN AND ANCHOR LAYOUT

FRED A. NUDD CORPORATION
Route 104-Ontario, New York 14519-315/524-2531

SCALE: N/S
DATE: 11/03/97
DRAWN BY: ELR

FOUNDATION DETAILS

COT
BOZRAH, CT

DRAWING NUMBER: 97-5463-2

11-18-1997
16:55:27
CDT
Bozrah, NY
5463

Guy Cable Data ft, lb

	Elev	Horiz	Length	Angle	Wind Length	Total Length	Cable Type
Cable 3 :	170	145	224	49.70	1189	1345	EHS
Cable 2 :	120	145	189	39.84	938	1133	EHS
Cable 1 :	60	145	157	22.81	339	472	EHS

Cable Loads -lb

	Shear	Download	Cable Load	Cable Size	%Loaded
Cable 3 :	23979	32654	42813	2 - 5/8x7	100.97
Cable 2 :	17133	16509	25766	2 - 9/16x7	73.62
Cable 1 :	11798	5731	14779	1 - 9/16x7	84.45

Cable Safety Factor: 2
Shear at 0': 3602 lb
Shear on Guy Anchors: 351 lb

Accumulated Down Loads

Elevation	Down load (lb)
170.0	49138
145.0	55546
120.0	87542
90.0	93703
60.0	107550
30.0	112635
0.0	117720

Guy Anchor Reactions

Vertical Reaction: 54894 lbs
Horizontal Reaction: 61095 lbs
Resultant: 82134 lbs
Angle: 41.93 Degrees

Tower Plot Dimensions

A= 217.5 ft
B= 145 ft
C= 72.5 ft
D= 251.2 ft
E= 125.58 ft

MOMENT DISTRIBUTION OUTPUT - boz

Beam Configuration:

4 Spans 3 Beams

SPAN	FEMB	FEMT	VB	VT	dfB	dfT
1	-46500	46500	4650	4650	1.0000	0.5000
2	-62100	62100	6210	7533	0.5000	0.4545
3	-77160	96212	8763	13551	0.5455	1.0000
4	-71396	0	9217	0	0.0000	0.0000

10 Iterations

SPAN #	DISTRIBUTED MOMENTS(ft-lb) MOM B	MOM T	SHEARS(lb) VB	VT	REACTIONS(lb)
1	0	62855	3602	5697	3602
2	-62856	74379	6017	7725	11715
3	-74380	71395	8823	13492	16548
4	-71396	0	9217	0	22709
					0

Elevation	Moment	Accum. Download	Resolved Legload	Leg Capacity	% Loaded
0	0	102558	34186	74828	45.7
1	3525	102388	35137	74828	47.0
2	6895	102219	36043	74828	48.2
3	10110	102049	36905	74828	49.3
4	13170	101880	37723	74828	50.4
5	16075	101710	38496	74828	51.4
6	18824	101541	39225	74828	52.4
7	21419	101371	39910	74828	53.3
8	23859	101202	40551	74828	54.2
9	26144	101032	41147	74828	55.0
10	28274	100863	41699	74828	55.7
11	30249	100693	42207	74828	56.4
12	32069	100524	42670	74828	57.0
13	33734	100354	43090	74828	57.6
14	35244	100185	43465	74828	58.1
15	36599	100015	43795	74828	58.5
16	37799	99846	44082	74828	58.9
17	38844	99676	44324	74828	59.2
18	39733	99507	44521	74828	59.5
19	40468	99337	44675	74828	59.7
20	41048	99168	44784	74828	59.8
21	41473	98998	44849	74828	59.9
22	41743	98829	44870	74828	60.0
23	41858	98659	44846	74828	59.9
24	41818	98490	44778	74828	59.8
25	41623	98320	44666	74828	59.7
26	41273	98151	44509	74828	59.5
27	40768	97981	44308	74828	59.2
28	40108	97812	44063	74828	58.9
29	39293	97642	43774	74828	58.5
30	38322	97473	43440	74828	58.1
31	37197	97303	43062	74828	57.5
32	35917	97134	42640	74828	57.0
33	34482	96964	42173	74828	56.4
34	32892	96795	41663	74828	55.7
35	31147	96625	41108	74828	54.9
36	29247	96456	40508	74828	54.1
37	27192	96286	39865	74828	53.3
38	24982	96117	39177	74828	52.4
39	22617	95947	38444	74828	51.4
40	20097	95778	37668	74828	50.3
41	17421	95608	36847	74828	49.2
42	14591	95439	35982	74828	48.1
43	11606	95269	35073	74828	46.9
44	8466	95100	34119	74828	45.6
45	5171	94930	33121	74828	44.3
46	1721	94761	32079	74828	42.9
47	-1884	94591	32069	74828	42.9
48	-5644	94422	33087	74828	44.2
49	-9559	94252	34149	74828	45.6

Elevation	Moment	Accum. Download	Resolved Legload	Leg Capacity	% Loaded
50	-13629	94083	35255	74828	47.1
51	-17854	93913	36406	74828	48.7
52	-22234	93744	37601	74828	50.2
53	-26770	93574	38840	74828	51.9
54	-31460	93405	40123	74828	53.6
55	-36305	93235	41451	74828	55.4
56	-41305	93066	42823	74828	57.2
57	-46460	92896	44240	74828	59.1
58	-51770	92727	45700	74828	61.1
59	-57235	92557	47205	74828	63.1
60	-62855	92388	48755	74828	65.2
61	-56941	92098	46968	74828	62.8
62	-51233	91929	45281	74828	60.5
63	-45733	91759	43653	74828	58.3
64	-40439	91590	42084	74828	56.2
65	-35353	91420	40574	74828	54.2
66	-30474	91251	39124	74828	52.3
67	-25801	91081	37732	74828	50.4
68	-21336	90912	36400	74828	48.6
69	-17077	90742	35127	74828	46.9
70	-13026	90573	33913	74828	45.3
71	-9181	90403	32758	74828	43.8
72	-5544	90234	31662	74828	42.3
73	-2114	90064	30625	74828	40.9
74	1110	89895	30282	74828	40.5
75	4126	89725	31087	74828	41.5
76	6936	89556	31834	74828	42.5
77	9538	89386	32521	74828	43.5
78	11934	89217	33149	74828	44.3
79	14122	89047	33717	74828	45.1
80	16103	88878	34227	74828	45.7
81	17878	88708	34677	74828	46.3
82	19445	88539	35069	74828	46.9
83	20806	88369	35401	74828	47.3
84	21959	88200	35674	74828	47.7
85	22906	88030	35888	74828	48.0
86	23645	87861	36043	74828	48.2
87	24177	87691	36138	74828	48.3
88	24503	87522	36175	74828	48.3
89	24621	87352	36152	74828	48.3
90	24533	87183	36070	74828	48.2
91	24237	87013	35929	74828	48.0
92	23734	86844	35729	74828	47.7
93	23025	86674	35470	74828	47.4
94	22108	86505	35152	74828	47.0
95	20985	86335	34774	74828	46.5
96	19654	86166	34337	74828	45.9
97	18117	85996	33842	74828	45.2
98	16372	85827	33287	74828	44.5
99	14420	85657	32673	74828	43.7

Elevation	Moment	Accum. Download	Resolved Legload	Leg Capacity	% Loaded
100	12262	85488	31999	74828	42.8
101	9896	85318	31267	74828	41.8
102	7324	85149	30475	74828	40.7
103	4544	84979	29625	74828	39.6
104	1558	84810	28715	74828	38.4
105	-1636	84640	28681	74828	38.3
106	-5037	84471	29596	74828	39.6
107	-8644	84301	30570	74828	40.9
108	-12459	84132	31604	74828	42.2
109	-16480	83962	32696	74828	43.7
110	-20709	83793	33848	74828	45.2
111	-25144	83623	35059	74828	46.9
112	-29787	83454	36329	74828	48.5
113	-34637	83284	37658	74828	50.3
114	-39693	83115	39046	74828	52.2
115	-44957	82945	40493	74828	54.1
116	-50427	82776	42000	74828	56.1
117	-56105	82606	43565	74828	58.2
118	-61989	82437	45190	74828	60.4
119	-68081	82267	46874	74828	62.6
120	-74380	82098	48617	74828	65.0
121	-65676	48201	34831	74828	46.5
122	-57211	48034	32357	74828	43.2
123	-48986	47866	29951	74828	40.0
124	-40999	47699	27614	74828	36.9
125	-33251	47532	25344	74828	33.9
126	-25742	47365	23143	74828	30.9
127	-18473	47198	21011	74828	28.1
128	-11442	47031	18946	74828	25.3
129	-4650	46864	16950	74828	22.7
130	1902	46697	16109	74828	21.5
131	7379	45718	17348	74828	23.2
132	12617	45553	18789	74828	25.1
133	17616	45389	20163	74828	26.9
134	22376	45224	21468	74828	28.7
135	26897	45059	22705	74828	30.3
136	31179	44895	23873	74828	31.9
137	35222	44730	24973	74828	33.4
138	39026	44565	26005	74828	34.8
139	42591	44400	26969	74828	36.0
140	45917	44236	27864	74828	37.2
141	48167	43259	28182	74828	37.7
142	50178	43097	28702	74828	38.4
143	51950	42935	29155	74828	39.0
144	53484	42773	29539	74828	39.5
145	54778	42610	29854	74828	39.9
146	55833	42448	30102	74828	40.2
147	56649	42286	30281	74828	40.5
148	57226	42123	30392	74828	40.6
149	57565	41961	30434	74828	40.7

Elevation	Moment	Accum. Download	Resolved Legload	Leg Capacity	% Loaded
150	57664	41799	30408	74828	40.6
151	55617	40905	29525	74828	39.5
152	53331	40764	28825	74828	38.5
153	50806	40624	28057	74828	37.5
154	48042	40483	27220	74828	36.4
155	45039	40342	26316	74828	35.2
156	41797	40201	25342	74828	33.9
157	38315	40061	24301	74828	32.5
158	34595	39920	23191	74828	31.0
159	30636	39779	22013	74828	29.4
160	26438	39639	20767	74828	27.8
161	17730	38290	17829	74828	23.8
162	8784	38170	15233	74828	20.4
163	-402	38051	12799	74828	17.1
164	-9827	37932	15452	74828	20.6
165	-19491	37813	18173	74828	24.3
166	-29394	37694	20963	74828	28.0
167	-39536	37575	23821	74828	31.8
168	-49917	37456	26747	74828	35.7
169	-60536	37337	29742	74828	39.7
170	-71395	37218	32805	74828	43.8
171	-62297	2357	18585	74828	24.8
172	-53439	2260	16022	74828	21.4
173	-44819	2162	13526	74828	18.1
174	-36438	2065	11099	74828	14.8
175	-28296	1967	8740	74828	11.7
176	-20393	1870	6450	74828	8.6
177	-12729	1772	4228	74828	5.6
178	-5304	1675	2074	74828	2.8
179	-2533	347	839	74828	1.1
180	0	250	83	74828	0.1

Project: CDT
Location: Bozrah, CT
Date: 10/97

$i := 0, step .. M_{last(M^{<0>}),0}$

$j := 0, 1 .. L_{last(L^{<0>}),0}$

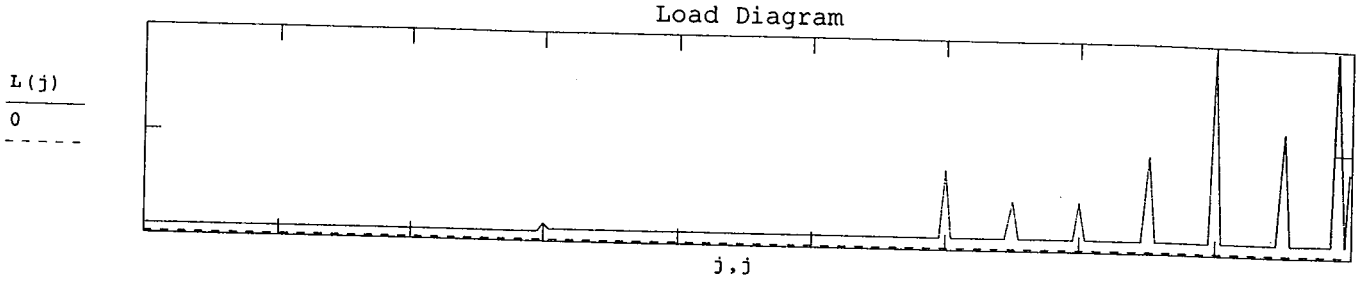
Maximum_Download := 117720

Maximum_Load = 4653.2

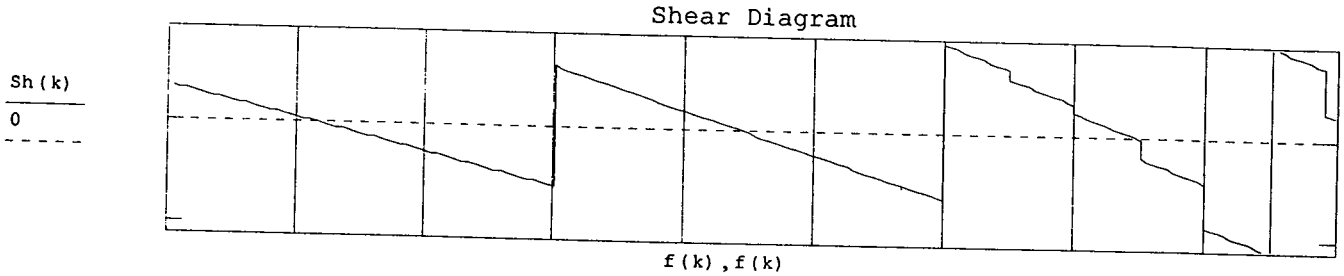
Lmax := Maximum_Load

Top := 180 ft High

Load Diagram

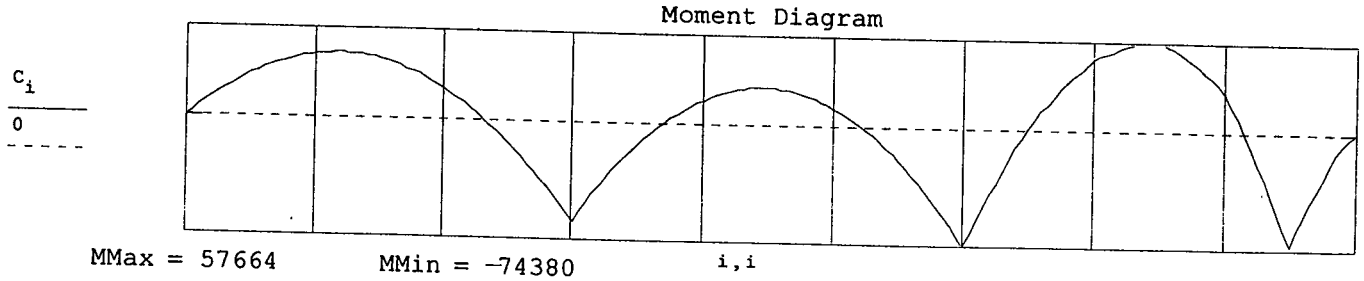


Shear Diagram



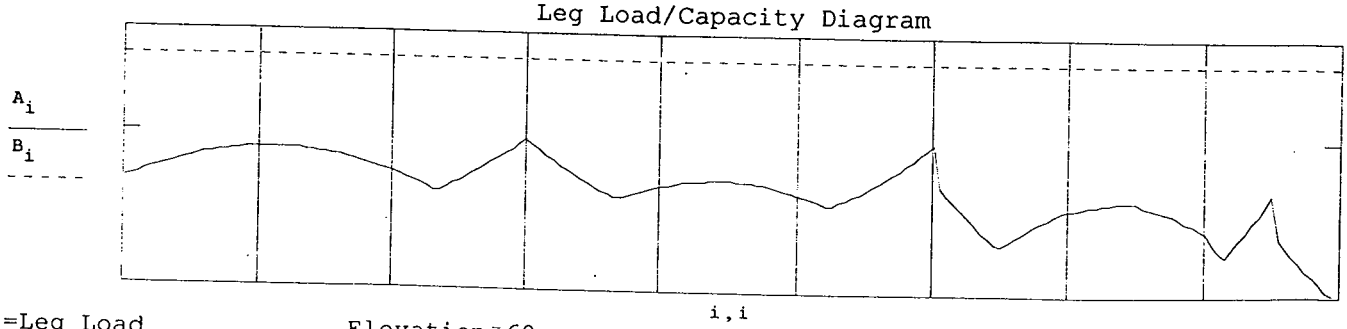
SMax = 9217.4 SMin = −10978.4

Moment Diagram



MMax = 57664 MMin = −74380

Leg Load/Capacity Diagram



A_i=Leg Load
B_i=Leg Capacity
C_i=Moment

Elevation = 60
Moment = −62855

Leg_Load = 48755
Leg_Capacity = 74828

Percent_Loaded = 65.2 %

Check Girts at Guy Pulls:

Steel Properties:

$E := 29 \cdot 10^6 \cdot psi$

$Fy_{girt} := 45000 \cdot psi$

$Fy_{diag} := 45000 \cdot psi$

Tensile capacity of (1) L1.75x1.75x1/4:

$$Area := \left[1.75^2 - (1.75 - .25)^2 - .375 \cdot .25\right] \cdot in^2$$

$$Capacity := .6 \cdot Fy_{girt} \cdot \frac{4}{3} \cdot Area \cdot 1 \cdot bars$$

$Capacity = 25875 \cdot lbf$

Maximum Single cable shear is 11798 lb, resolved into each brace.

$$Percent\_Loaded_2 := \frac{\frac{11798 \cdot lbf}{2 \cdot girt \cdot \cos(30 \cdot deg)}}{Capacity}$$

$Percent\_Loaded_2 = 26.3 \cdot \%$

Check compression capacity of girts against maximum shear:

$l := (42 - 2.875) \cdot in$ $\quad Area := \left[1.5^2 - (1.5 - .1875)^2\right] \cdot in^2$

$r := .293 \cdot in$ $\quad$ L1.5x1.5x.1875"

$K := .70$ $\quad$ All welded

$Area = 0.527 \cdot in^2$

$$klr := \frac{K \cdot l}{r} \qquad Cc := \sqrt{\frac{2 \cdot \pi^2 \cdot E}{Fy_{girt}}}$$

$klr = 93.5$

$Cc = 112.8$

$$Fa := \frac{\left[1 - \frac{\left(\frac{klr}{Cc}\right)^2}{2}\right] \cdot Fy_{girt}}{\frac{5}{3} + \frac{3}{8} \cdot \frac{klr}{Cc} - \left(\frac{klr}{2 \cdot Cc}\right)^3} \cdot (klr < Cc) + \frac{12 \cdot \pi^2 \cdot E}{23 \cdot klr^2} \cdot (klr \geq Cc)$$

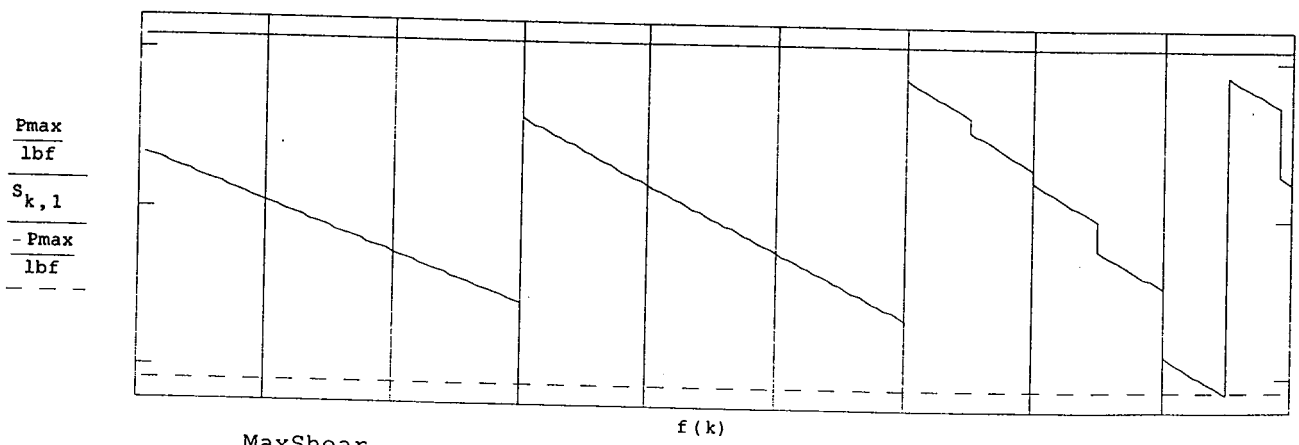
$Fa = 15499.2 \cdot psi$

Maximum allowable compression load:

$$Pmax := Fa \cdot \frac{4}{3} \cdot Area$$

$Pmax = 10897.9 \cdot lbf$

$MaxShear = 10978.4$



$$Percent\_Loaded_3 := \frac{MaxShear}{Pmax} \cdot lbf$$

$Percent\_Loaded_3 = 100.7 \cdot$

Check tension capacity of diagonals:

$$S(k) := \frac{Sh(k)}{2 \cdot braces \cdot \cos(45 \cdot deg)}$$

$$Pmax := \frac{\pi}{4} \cdot \left(\frac{5}{8} \cdot in\right)^2 \cdot .6 \cdot Fy_{diag} \cdot \frac{4}{3}$$

$$Pmax = 11044.7 \cdot lbf$$

Tensile load of Diagonals

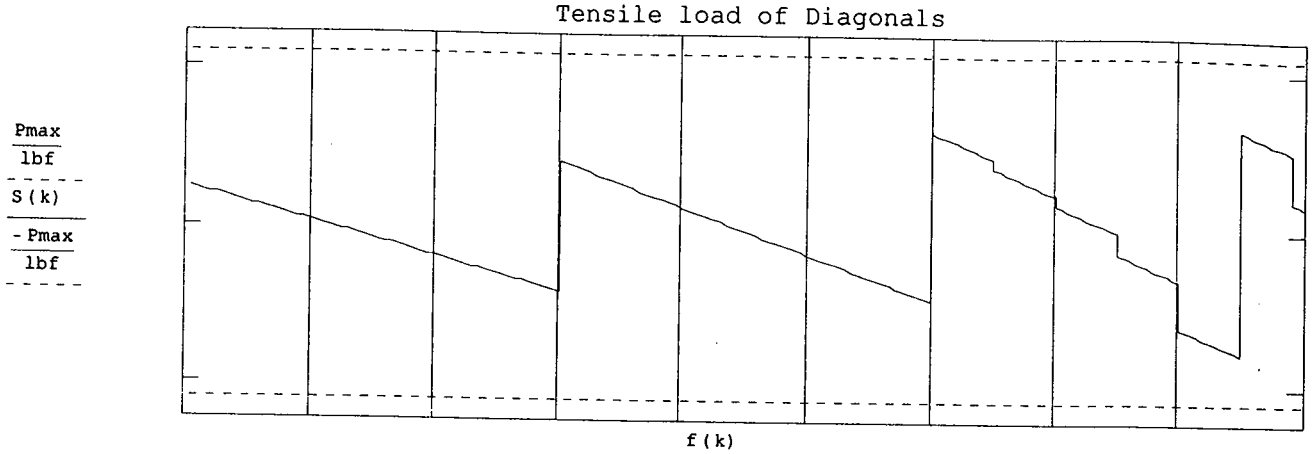
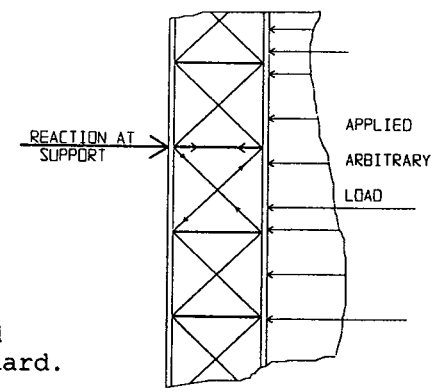


Diagram of force resolution:



Bracing:
Use 5/8" diagonals throughout tower,
3/4" at guypull panels.
Use L1.75x1.75x1/4 at guypulls,
L1.5x1.5x.1875" everywhere else.
Legs: 2-1/2"/3" pipe

All allowable stresses per
American Institute of Steel Construction 9th edition and
Electronics Industry Association 222-E recommended standard.

Calculate the required weld for connection of the double rod on the guy anchor head:

$Resultant := 100 \cdot kip$

$BarLoad := \frac{Resultant}{2 \cdot bars}$

$WeldLength := 4 \cdot in$

Minimum partial penetration groove weld: Assume only 80% penetration

$Weld := \frac{BarLoad}{2 \cdot WeldLength \cdot 80 \cdot \% \cdot .75 \cdot in}$

$\frac{Weld}{.30 \cdot 70000 \cdot psi} = 49.6 \cdot \%$

Check Block Shear failure of guy head. $Fu := 58000 \cdot psi$ $Plate := .75 \cdot in$

$TensionArea := 1.5 \cdot in \cdot Plate$

$ShearArea := 4 \cdot in \cdot 2 \cdot sides \cdot Plate$

$Capacity_1 := ShearArea \cdot .30 \cdot Fu + TensionArea \cdot .50 \cdot Fu$ $Capacity_1 = 137 \cdot ki$

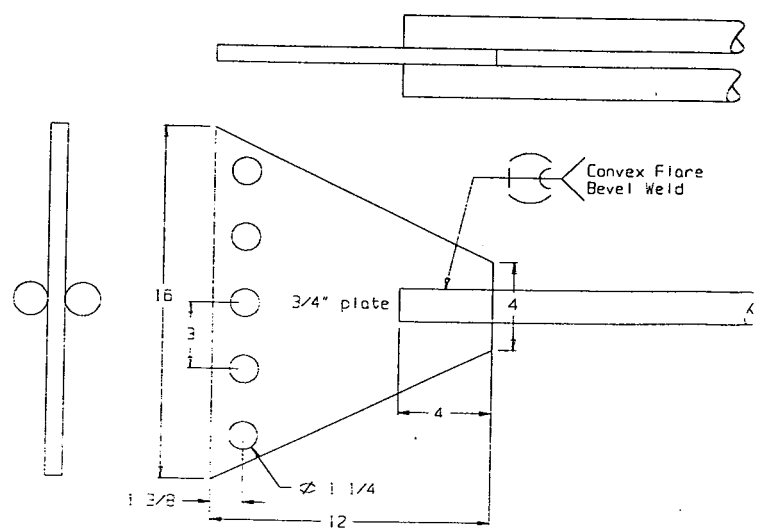
$ShearArea \cdot .30 \cdot Fu = 104.4 \cdot kip$

$TensionArea \cdot .50 \cdot Fu = 32.6 \cdot kip$ $\frac{Resultant}{Capacity_1} = 73 \cdot \%$

Check block shear of bolt hole using splitter for top two guy levels:

$Load := 35 \cdot kip$ (Full allowable load for 9/16" EHS)

$Capacity_2 := .30 \cdot Fu \cdot Plate \cdot 1.375 \cdot in \cdot 2 \cdot sides$ $\frac{Load}{Capacity_2} = 97.5 \cdot \%$



INNER GUY ANCHOR DESIGN CALCULATIONS

Customer:	CDT
Project:	Bozrah, NY
11/19/97	7:23 AM

REACTIONS:

Vertical	54.9 kips
Horizontal	61.1 kips
Resultant	82.1 kips
Hor. Angle	41.9 °
Submerged?	0 No
Water Depth:	0 ft

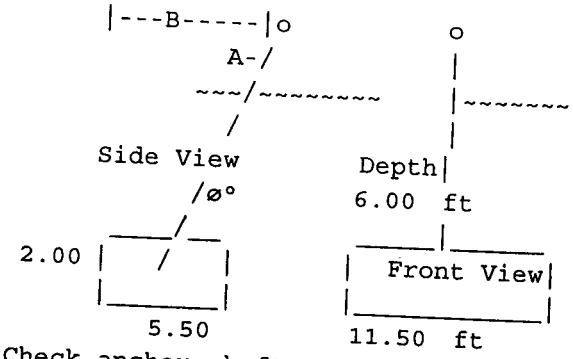
Soil Wt:	100.0 lb/ft^3
Soil Gs:	2.65
Subm Soil Wt	62.3 lb/ft^3
H.Bearing	400.0 psf/ft
Rebar Fy:	60.0 ksi
Conc. Wt:	150.0 lb/ft^3
Conc f`c:	4.0 ksi

CONCRETE WEIGHT:

Block Volume	4.7 cu yds
Block Wt	19.0 kips

SOIL FRUSTUM WEIGHT:

Frustum:	30 °
Block:	38.0 kips
Edges:	35.3 kips
Corners:	9.6 kips
Total Wt:	82.9 kips
Excavatn:	506 cuft



Check anchor shaft embedment? OK

HORIZONTAL CAPACITY: EIA 7.1.2

Load @	7 ft
Load:	64400 lb

Design Loads:	Uplift	Horizontal	
	54.89	61.10	kips
Capacity:*	56.62	64.40	kips
% Loaded:	97%	95%	OK

* EIA 7.2.4

Concrete Volume: 14.1 cu yds

GUY ANCHOR ROD:

Resultant	82.13	kips
Hole QTY	6	holes
# of rods	1	
Fy	48000	psi
Min. Area	2.139	in²/bar
Min. Dia.	1.650	in
Act. Area	2.405	in²/bar
Act. Dia.	1.75	in, 88.9% Loaded
Anchor ID:	GA6-115-15	

ANCHOR ROD LENGTH:

Minimum:	13.22	ft
Maximum:	14.96	ft
Recommend:	14.00	ft
Actual:	15	ft

BLOCK REINFORCEMENT: Cover: 6 in

	Vertical	Horizontal		
Factored Loads:	71.4	79.4	kips	EIA 3.1.13
Factored Moment:	1367.8	1522.3	kip-inch	
Minimum As:	1.710	0.566	in²	ACI 10.5.1
Minimum Qty:	9	3		Bar #:
Actual Qty:	9	3		4
Actual As:	1.767	0.589	in²	OK

ANCHOR DIMENSIONS

Length	11'- 6"
Width	5'- 6"
Height	2'- 0"
Depth	6'- 0"
OADepth	8'- 0"
Dim. A:	6'- 11"
Dim. B:	12'- 5"
ø:	41°

REBAR DIMENSIONS:

RBL:	121"	
RBH:	12"	
RBW:	56"	
Bent OAL:	68"	
QTY Long:	13	Bars ea
QTY Bent:	14	Bars ea
Rebar Wt.	157	lb ea

MASTER CHECK: OK

SQUARE FOOTING AND PIER DESIGN

Customer: CDT
Project: Bozrah, NY
11/19/97 7:23 AM

Dead Load 0.0 kips
Live Load 120 kips
G42W10x49 Base Transition ID

ASSUMED DIMENSIONS:

Width	5.50 ft	OK	f'c:	3000	psi
Thickness	1.50 ft		Fy:	60000	psi
Pier OD	2.00 ft		Soil:	4000	psf bearing capacity
Sqr Pier	0				
Rnd Pier	1		Pier Area:	452	inch²
Depth	3.00 ft		Ht. above Grade	12	inches
Cover	6 inches				
Bar #	4	0.5			
Eff.Depth	11.750 inches				

CALCULATIONS: Minimum Width: 5.477 ft
Ultimate Load: 168.3 kips ACI 9.2.2
Net Load: 5562 psf (factored)

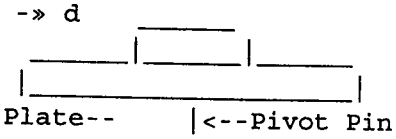
CHECK SHEAR

Two Way Action: Assumes ßc=1
Vu: 129481 lbs
Vc: 245756 lbs
52.69% <= OK =>

One Way Action Load Area: 4.240 ft²
Vu: 23581 lbs
Vc: 72209 lbs
32.66%

LOAD TRANSFER Pier Capacity/Pu ACI 15.8
@ Pad/Pier interfac 480% OK - Dowels not required.

Pivot Pin Bearing Stress: ACI 10.15.1
Minimum Area 47 inch²
Minimum plate OD 7.75 inchø, 6.87" ea. side square
Distance "d" to edge 0.5 inch -» d
Minimum Plate Thickness: 0.2945 inch



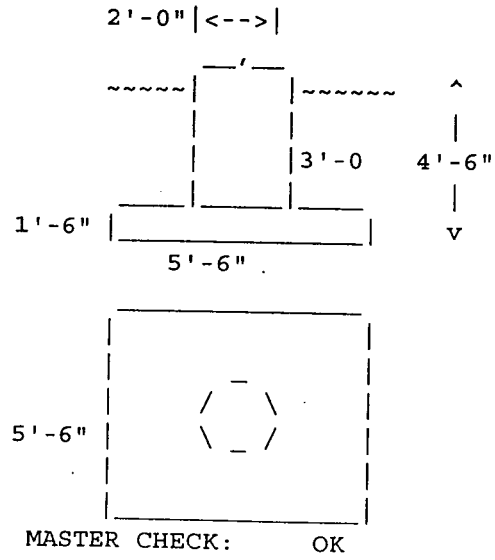
MINIMUM PIER REINFORCING ACI 15.8.2.1, 7.10.5

	.5% Req.	2.262 inch²	Steel Area:
8 Bars of #	5	2.454 inch²	OK

Bar Lngth: 55.5 inch
Pier Tie bar #: 4 10 " tie bar spacing

PAD BENDING MOMENT REINFORCEMENT

Mu: 46843 ft-lbs
Ratio: 0.001552 ACI 10.5.1
Steel: 1.203 inch²
Bar #: 5
Req'd QTY: 4
Act'l QTY: 5 OK
Act. Stl: 1.534 inch²
Act. d: 11.500 inches



Moment? OK
Ldb: 11.25 inches OK

Mat Bars:
10 @ 13.50" spacing
85 lb

Concrete:
2.0 cuyd
8220.0 lb

MASTER CHECK: OK

Concrete Per ACI 318-89, ANSI/EIA 222-E, AISC ASD 9th Edition

Tower Loads

Point Loads

No.	QTY	Antenna	Elevation	Windload	Deadload
1	3	12' Cellular Boom	178	292	170
2	9	Sinclair SRL 411C9R130	178	393	80
3	10	PD 10017	180	241	25
4	3	12' Cellular Boom	170	288	170
5	9	ALP 9212	170	124	27
6	3	12' Cellular Boom	160	283	170
7	9	Sinclair SRL 411C9R130	160	380	80
8	3	12' Cellular Boom	150	278	170
9	9	ALP 9212	150	119	27
10	1	6' MHP Dish	140	837	814
11	1	6' MHP Dish	130	837	814
12	1	6' MHP Dish	120	837	814
13	1	G42 Torque Arm	170	537	262
14	1	G42 Torque Arm	120	486	262

Uniform Loads

No.	QTY	Type	Start	Stop	Windload	Deadload
1	19	LDF7-50A 1-5/8"	0	180	0.00	2.40
2	9	LDF7-50A 1-5/8"	0	170	0.00	2.40
3	9	LDF7-50A 1-5/8"	0	160	0.00	2.40
4	9	LDF7-50A 1-5/8"	0	150	0.00	2.40
5	1	LDF7-50A 1-5/8"	0	140	0.00	2.40
6	1	LDF7-50A 1-5/8"	0	130	0.00	2.40
7	1	LDF7-50A 1-5/8"	0	120	0.00	2.40
8	1	Tower Span 1	0	60	155.00	51.90
9	1	Tower Span 2	60	120	207.00	51.90
10	1	Tower Span 3	120	180	239.00	51.90

TRIANGULAR TOWER SECTION DATA

========== ========= ==========

Guyed Tower Section

Wind Angle 0,60,90 90 °

Elevation of Foundation: 1 ft

Wind Speed 85 mph

Gh 1.12 EIA 2.3.4

Wind Pres. 32.0 psf EIA 2.3.3

Radial Ice 0.5 inch

EIA 2.3.15 Wind/Ice Reductn? Yes

ANSI/EIA Overstress Factor: Yes

LEGS	OD,L1	ID,L2	wall
2.5" Sch40	2.875	2.469	0.203
DIAGONALS			
5/8" Rod	0.625	0.000	0.313
HORIZONTALS			
L1.5x1.5x3	1.500	1.500	0.188

Dbl Angle Gap: 0 in

Galvanizing? Yes

WaveGuide hole reduction? Yes

ITEM	DL	WL
Ladder:	10	10
Misc.	10	10
Total lbf:	20	20

Client: CDT

Project: Bozrah, CT

11/18/97 4:09 PM Tria

Span:	3	
Elev@Top	160 feet	
Elev@Base	140 feet	
Tower Ht.	180 feet	
Top Face	42 inches	3.50
Bot Face	42 inches	3.50
Taper	0 in./sect.	
Ave Face	42 inches	
Length	240 inches	
FL.to BR	6 inches	
# Panel	6 panels	
Panel	38.00 inches	
Br/Panel	2 |x|	
Br Lngth	54.54 inches	
# Horiz	7	7
Density	0.283 lb/in^3	
Bracing Type:	1 |x|	

SECTION GEOMETRY »	1508	in^4
Section Ixx,Iyy »	1508	in^4
Face Vert. Angle	0.000	°
Leg Angle in face	0.000	°
Leg/Axis Angle	0.000	°
Brace Angle	42.138	°

SECTION WIND LOAD / WEIGHT CALCULATIONS:

	Pro OD	X-Area	Weight	Ice Wt
Legs	3.875	1.704	347.2	123.7 lbs
Diagonals	1.625	0.307	170.5	112.4 lbs
Horizontals	2.500	0.527	131.6	100.0 lbs
		---	---	---
Total Weig			702	336 lbs

Ag:	11010		
Af:	411	Df:	0.850
Ar:	3197	Rr:	0.625
SR(e):	0.328	Dr:	1.000
Cf:	2.496		
Area:	16.30	ft²	
Shear:	996	49.8	lbf,lbf/
CnMoment:	9964		ft-lbf
Deadload:	1038	51.9	lbf,lbf/ft

Solid Area Windloads:

Shear:	4787	239.4 lbf,lbf/ft

	inches²	feet²
Ae 0°	2408.5	16.73
Ae 45°	2890.2	20.07
Ae 60°	2326.3	16.16
Ae 90°	2346.9	16.30

Span Length	60	ft
pan Capacity	74828	lbf/leg

	K	1.00	
Legs:	KL/r	40.1	OK
	Fy	67000	psi
EIA 3.1.1,	Cc	92.4	
AISC E2	Fa	44483	psi
Max.Compresn.Force		75802	lbs
	K	0.70	
Diagonals :	KL/r	119.1	OK
	Fy	36000	psi
	Cc	126.1	
EIA 3.1.1	Fa	13882	psi
Max.Compresn.Force		4259	lbs
Max.Tension.Force*		8836	lbs

*Verify Net Section on member.

	K	0.7	
Horizontals:	KL/r	93.4	OK
	Cc	126.1	
EIA 3.1.1	Fa	18401	psi
Max.Compresn.Force		8194	lbs

TRIANGULAR TOWER SECTION DATA

========== ========= ==========

Guyed Tower Section

Wind Angle 0,60,90 90 °

Elevation of Foundation: 1 ft

Wind Speed 85 mph

Gh 1.12 EIA 2.3.4

Wind Pres. 20.7 psf EIA 2.3.3

Radial Ice 0.5 inch

EIA 2.3.15 Wind/Ice Reductn? Yes

ANSI/EIA Overstress Factor: Yes

LEGS	OD,L1	ID,L2	wall
2.5" Sch40	2.875	2.469	0.203
DIAGONALS			
5/8" Rod	0.625	0.000	0.313
HORIZONTALS			
L1.5x1.5x3	1.500	1.500	0.188

Dbl Angle Gap: 0 in

Galvanizing? Yes

WaveGuide hole reduction? Yes

ITEM	DL	WL
Ladder:	10	10
Misc.	10	10
Total lbf:	20	20

Client: CDT

Project: Bozrah, CT

11/18/97 4:09 PM Tria

Span:	1		
Elev@Top	40	feet	
Elev@Base	20	feet	
Tower Ht.	180	feet	
Top Face	42	inches	3.50
Bot Face	42	inches	3.50
Taper	0	in./sect.	
Ave Face	42	inches	
Length	240	inches	
FL.to BR	6	inches	
# Panel	6	panels	
Panel	38.00	inches	
Br/Panel	2	|x|	
Br Lngth	54.54	inches	
# Horiz	7	7	
Density	0.283	lb/in^3	
Bracing Type:	1	|x|	

SECTION GEOMETRY »	1508	in^4
Section Ixx,Iyy »	1508	in^4
Face Vert. Angle	0.000	°
Leg Angle in face	0.000	°
Leg/Axis Angle	0.000	°
Brace Angle	42.138	°

SECTION WIND LOAD / WEIGHT CALCULATIONS:

	Pro OD	X-Area	Weight	Ice Wt
Legs	3.875	1.704	347.2	123.7 lbs
Diagonals	1.625	0.307	170.5	112.4 lbs
Horizontals	2.500	0.527	131.6	100.0 lbs
Total Weig			702	336 lbs

Ag:	11010		
Af:	411	Df:	0.850
Ar:	3197	Rr:	0.625
SR(e):	0.328	Dr:	1.000
Cf:	2.496		
Area:	16.30		ft²
Shear:	652	32.6	lbf,lbf/ft-lbf
CnMoment:	6523		
Deadload:	1038	51.9	lbf,lbf/ft
Solid Area Windloads:			
Shear:	3100	155.0	lbf,lbf/ft

	inches²	feet²
Ae 0°	2408.5	16.73
Ae 45°	2890.2	20.07
Ae 60°	2326.3	16.16
Ae 90°	2346.9	16.30

Span Length	60	ft
pan Capacity	74828	lbf/leg

Legs:	K	1.00	
	KL/r	40.1	OK
	Fy	67000	psi
EIA 3.1.1, AISC E2	Cc	92.4	
	Fa	44483	psi
Max.Compresn.Force		75802	lbs
Diagonals :	K	0.70	
	KL/r	119.1	OK
	Fy	36000	psi
	Cc	126.1	
EIA 3.1.1	Fa	13882	psi
Max.Compresn.Force		4259	lbs
Max.Tension.Force*		8836	lbs

*Verify Net Section on member.

Horizontals:	K	0.7	
	KL/r	93.4	OK
	Cc	126.1	
EIA 3.1.1	Fa	18401	psi
Max.Compresn.Force		8194	lbs

TRIANGULAR TOWER SECTION DATA

========== ========= ==========

Guyed Tower Section

Wind Angle 0,60,90 90 °

Elevation of Foundation: 1 ft

Wind Speed 85 mph

Gh 1.12 EIA 2.3.4

Wind Pres. 27.7 psf EIA 2.3.3

Radial Ice 0.5 inch

EIA 2.3.15 Wind/Ice Reductn? Yes

ANSI/EIA Overstress Factor: Yes

LEGS	OD,L1	ID,L2	wall
2.5" Sch40	2.875	2.469	0.203
DIAGONALS			
5/8" Rod	0.625	0.000	0.313
HORIZONTALS			
L1.5x1.5x3	1.500	1.500	0.188

Dbl Angle Gap: 0 in

Galvanizing? Yes

WaveGuide hole reduction? Yes

ITEM	DL	WL
Ladder:	10	10
Misc.	10	10
Total lbf:	20	20

Client: CDT

Project: Bozrah, CT

11/18/97 4:09 PM Tria

Span:	2	
Elev@Top	100	feet
Elev@Base	80	feet
Tower Ht.	180	feet
Top Face	42	inches 3.50
Bot Face	42	inches 3.50
Taper	0	in./sect.
Ave Face	42	inches
Length	240	inches
FL.to BR	6	inches
# Panel	6	panels
Panel	38.00	inches
Br/Panel	2	|x|
Br Lngth	54.54	inches
# Horiz	7	7
Density	0.283	lb/in^3
Bracing Type:	1	|x|

SECTION GEOMETRY »	1508	in^4
Section Ixx,Iyy »	1508	in^4
Face Vert. Angle	0.000	°
Leg Angle in face	0.000	°
Leg/Axis Angle	0.000	°
Brace Angle	42.138	°

SECTION WIND LOAD / WEIGHT CALCULATIONS:

	Pro OD	X-Area	Weight	Ice Wt
Legs	3.875	1.704	347.2	123.7 lbs
Diagonals	1.625	0.307	170.5	112.4 lbs
Horizontals	2.500	0.527	131.6	100.0 lbs
		---	---	---
		Total Weig	702	336 lbs

Ag:	11010		
Af:	411	Df:	0.850
Ar:	3197	Rr:	0.625
SR(e):	0.328	Dr:	1.000
Cf:	2.496		
Area:	16.30		ft²
Shear:	865	43.2	lbf,lbf/ft-lbf
CnMoment:	8649		
Deadload:	1038	51.9	lbf,lbf/ft
Solid Area Windloads:			
Shear:	4142	207.1	lbf,lbf/ft

	inches²	feet²
Ae 0°	2408.5	16.73
Ae 45°	2890.2	20.07
Ae 60°	2326.3	16.16
Ae 90°	2346.9	16.30

Span Length	60	ft
pan Capacity	74828	lbf/leg

	K	1.00	
Legs:	KL/r	40.1	OK
	Fy	67000	psi
EIA 3.1.1,	Cc	92.4	
AISC E2	Fa	44483	psi
Max.Compresn.Force		75802	lbs
	K	0.70	
Diagonals :	KL/r	119.1	OK
	Fy	36000	psi
	Cc	126.1	
EIA 3.1.1	Fa	13882	psi
Max.Compresn.Force		4259	lbs
Max.Tension.Force*		8836	lbs

*Verify Net Section on member.

	K	0.7	
Horizontals:	KL/r	93.4	OK
	Cc	126.1	
EIA 3.1.1	Fa	18401	psi
Max.Compresn.Force		8194	lbs

```
Input File:boz

*Tower Data File*
*Associated Data Files*
boz.out
boz.mom
boz.mcn
*ID*
CDT
Bozrah, NY
5463
*th face wind ice vo int az*
 180  42  85  .5  1  1  0
*Beam Configuration*
HBHBHBHC
*Guy Data*
 3
 2  170  145  EHS
 2  120  145  EHS
 1  60  145  EHS
*Section Inertia*
 3
 0  60  7.270259E-02
 60  120  7.270259E-02
 120  180  7.270259E-02
*Leg Capacity*
 3
 0  80  74827.66
 80  140  74827.66
 140  180  74827.66
*Point Loads*
 14
 3 12' Cellular Boom , 178  292.0766  170
 9 Sinclair SRL 411C9R130 , 178  393.1072  80
 10 PD 10017 , 180  241.3179  25
 3 12' Cellular Boom , 170  288.2642  170
 9 ALP 9212 , 170  123.5418  27
 3 12' Cellular Boom , 160  283.3141  170
 9 Sinclair SRL 411C9R130 , 160  380.0984  80
 3 12' Cellular Boom , 150  278.1378  170
 9 ALP 9212 , 150  119.2019  27
 1 6' MHP Dish , 140  836.7584  814
 1 6' MHP Dish , 130  836.7584  814
 1 6' MHP Dish , 120  836.7584  814
 1 G42 Torque Arm , 170  537.1382  262
 1 G42 Torque Arm , 120  486.258  262
*Uniform Loads*
 10
 19 LDF7-50A  1-5/8" , 0  180  0  2.4
 9 LDF7-50A  1-5/8" , 0  170  0  2.4
 9 LDF7-50A  1-5/8" , 0  160  0  2.4
 9 LDF7-50A  1-5/8" , 0  150  0  2.4
 1 LDF7-50A  1-5/8" , 0  140  0  2.4
```

```
 1 LDF7-50A  1-5/8" , 0  130  0  2.4
 1 LDF7-50A  1-5/8" , 0  120  0  2.4
 1 Tower Span 1 , 0  60  155  51.9
 1 Tower Span 2 , 60  120  207  51.9
 1 Tower Span 3 , 120  180  239  51.9
*End*
```

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

March 19, 1999

Honorable Raymond C. Barber
First Selectman
Town of Bozrah
Town Hall
1 River Road
Bozrah, CT 06334

RE: TS-SCLP-013-990317 - Springwich Cellular Limited Partnership request for an order to approve tower sharing at an existing telecommunications facility located off 3 Polly Lane in Bozrah, Connecticut.

Dear Mr. Barber:

On March 17, 1999, the Connecticut Siting Council (Council) received a request from Springwich Cellular Limited Partnership for an order to approve tower sharing at an existing telecommunications facility located off 3 Polly Lane in Bozrah, Connecticut, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting tentatively scheduled for Tuesday, April 6, 1999 at 1:30 p.m., in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

Please call me or inform the Council if you have any questions or comments regarding this modification of an existing facility.

Thank you for your cooperation and consideration.

Very truly yours,

Joel M. Rinebold
Executive Director

JMR/jlh

Enclosure: Notice of Intent

I:\siting\em\springw\bozrah\barber.doc

TS-SCLP-013-990317

SNET

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

RECEIVED
MAR 17 1999
CONNECTICUT
SITING COUNCIL

March 17, 1999

Peter W. van Wilgen
Director - Real Estate Operations

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

RE: Springwich Cellular Limited Partnership—Bozrah Cellular Communication Site

Dear Chairman Gelston:

Springwich Cellular Limited Partnership (SCLP) plans to install cellular antennas and a related equipment building at the tower facility owned by Mrs. Alice Maynard of Colchester, Connecticut, and managed by Cordless Data Transfer, Inc. of Marlborough, Connecticut. Please accept this letter as notice of intent, pursuant to R.C.S.A. Section 16-50aa, of the placement of associated equipment on an existing non-facility tower pursuant to R.C.S.A. Section 16-50aa. In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to the First Selectman of Bozrah.

The existing non-facility tower is a 185' guyed tower located at 3 Polly Lane, Bozrah, Connecticut. Omnipoint and NEXTEL Communications are presently located on the tower, and SCLP plans to install up to twelve panel-type cellular antennas on the tower. SCLP will also install a single story, approximately 12'x26' equipment building, which will contain radio transmission equipment.

The addition of SCLP's antennas and equipment to the tower site does not constitute a substantial environmental affect since such additions do not cause a significant change or alteration in the physical and environmental characteristics of the site (see attached site plan). Rather, the planned changes to the existing non-facility tower falls squarely within those activities explicitly provided for in R.C.S.A. Section 16-50aa.

First, the height of the existing tower will be unaffected. Twelve antennas, ALP Model 11011N, will be mounted four per sector on a triangular platform to be attached to the tower. The center of radiation will be 160' AGL and the top of the antennas will be 162' high. The tower will not require any structural modification to support the proposed attachments.

Second, the proposed addition will not extend the site boundaries. The proposed equipment building will be located next to the tower on a parcel of land of approximately 312 square feet in size, which will be leased to SCLP (see attached site plan).

Third, the proposed addition will not increase the noise levels at the existing facility by six decibels or more.

Fourth, operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to a level at or above the ANSI standard. The following table summarizes the power densities at the site from the various sources on the tower (including proposed herein) in relation to the standard.

FREQUENCY	POWER DENSITY	HEIGHT	ANSI/IEEE STANDARD LIMITS (mW/cm2)	% OF MPE
Omnipoint 1945	.0111	181'	1.0000	1.11
SCLP 880-894	0.0290	160'	0.5867	4.95
Nextel 851	0.0228	175'	0.5673	4.02
TOTAL	**N/A**		**N/A**	**10.08**

As the table demonstrates, SCLP's proposed antennas would contribute 4.95% of the ANSI standard for the cellular frequency range, bringing the site total to 10.08% of the standard as calculated for a mixed frequency site.

Finally, SCLP will obtain the necessary municipal approvals and permits for the project once Connecticut Siting Council approval has been received, as the Town of Bozrah requires proof of CSC approval before any permits will be issued.

SCLP submits that the proposed additions would not cause a significant change or alteration in the physical and environmental characteristics of the site and comply with R.C.S.A. Section 16-50aa. For the foregoing reasons, SCLP therefore requests a determination that the placement of the antennas and equipment on the existing non-facility tower site does not constitute a substantial environmental effect under R.C.S.A. Section 16-50aa, and that the requested tower sharing be approved.

Thank you for your consideration.

Sincerely,

EXHIBIT A
The Site

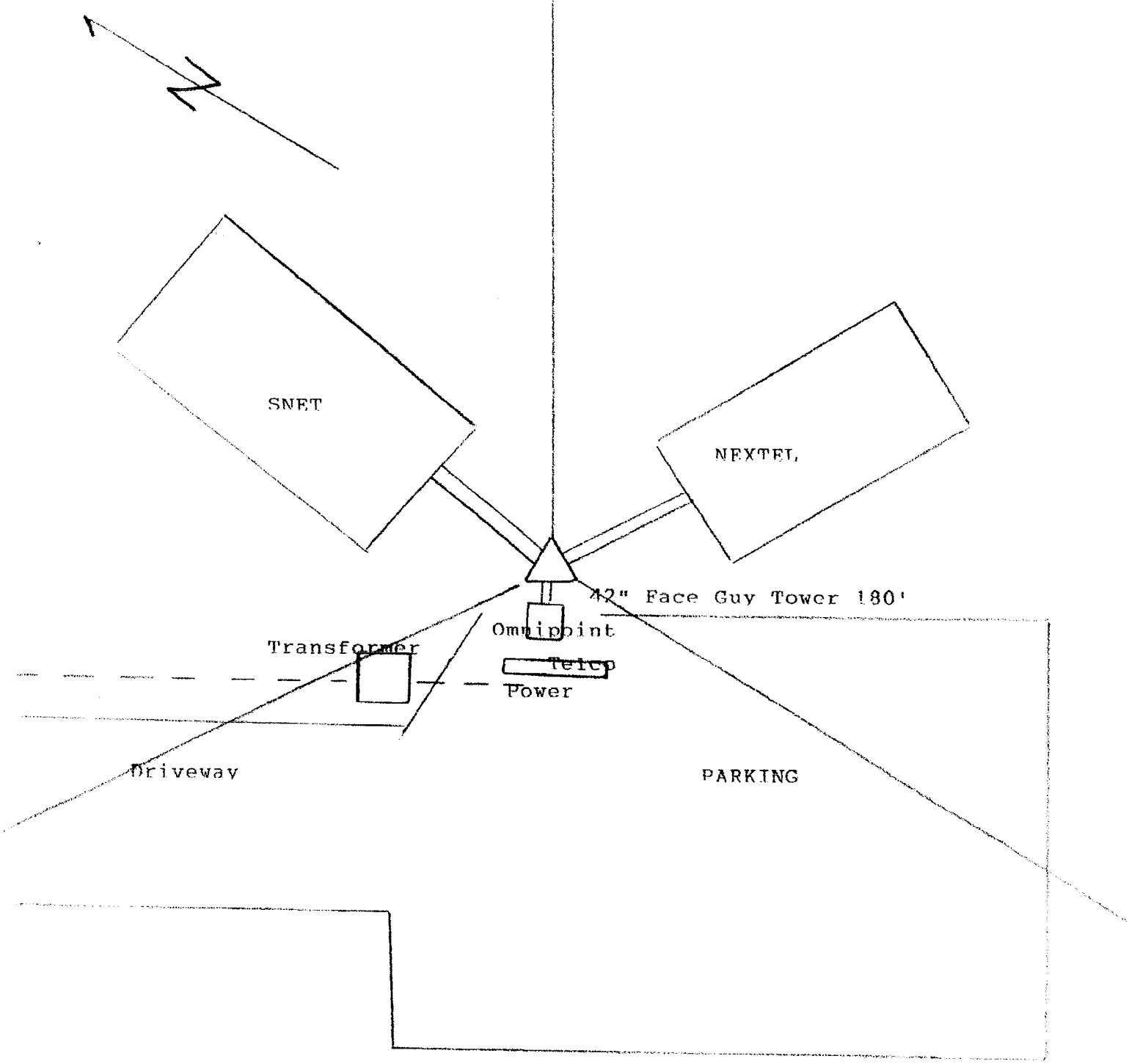
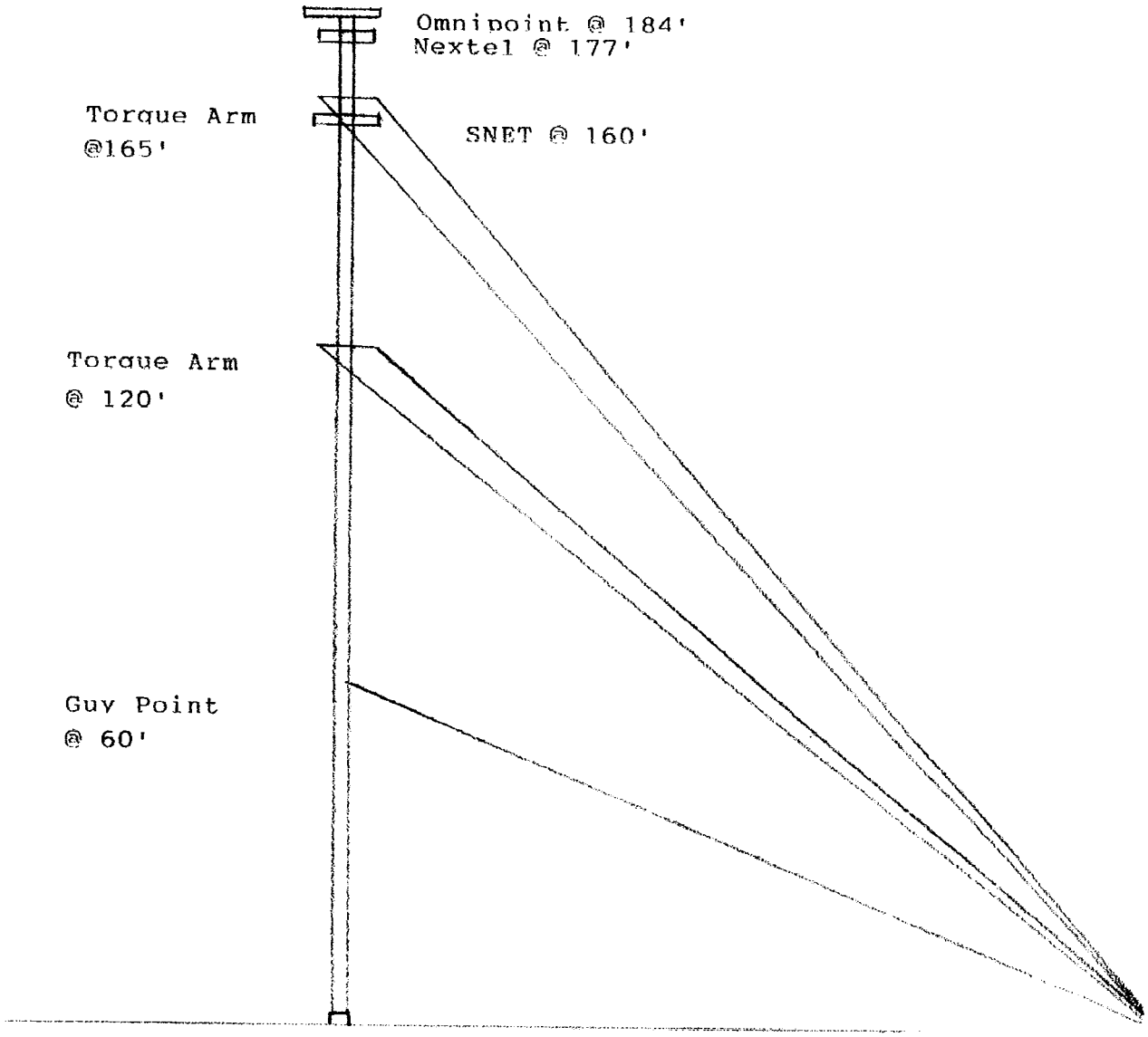


EXHIBIT B
Antennae Placement



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

Peter W. van Wilgen
Director - Real Estate Operations

March 17, 1999

Mr. Raymond Barber, First Selectman
Town of Bozrah
1 River Road
Bozrah, Connecticut 06334

Dear First Selectman Barber:

Springwich Cellular Limited Partnership (SCLP) plans to install antennas and associated equipment at the existing tower facility owned by Mrs. Alice Maynard of Colchester, Connecticut and managed by Cordless Data Transfer of Marlborough, Connecticut. As required by Section 16-50j-73 of the Regulations of Connecticut State Agencies (R.C.S.A.), please accept this letter and the attached letter to the Connecticut Siting Council dated March 16, 1999, describing SCLP's planned use of this tower facility.

The attached letter fully describes SCLP's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Joel Rinebold, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Enclosure