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-003-991115 - Springwich Cellular Limited Partnership request for an order to approve tower sharing at an existing telecommunications facility located at Ference Road in Ashford, 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 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.

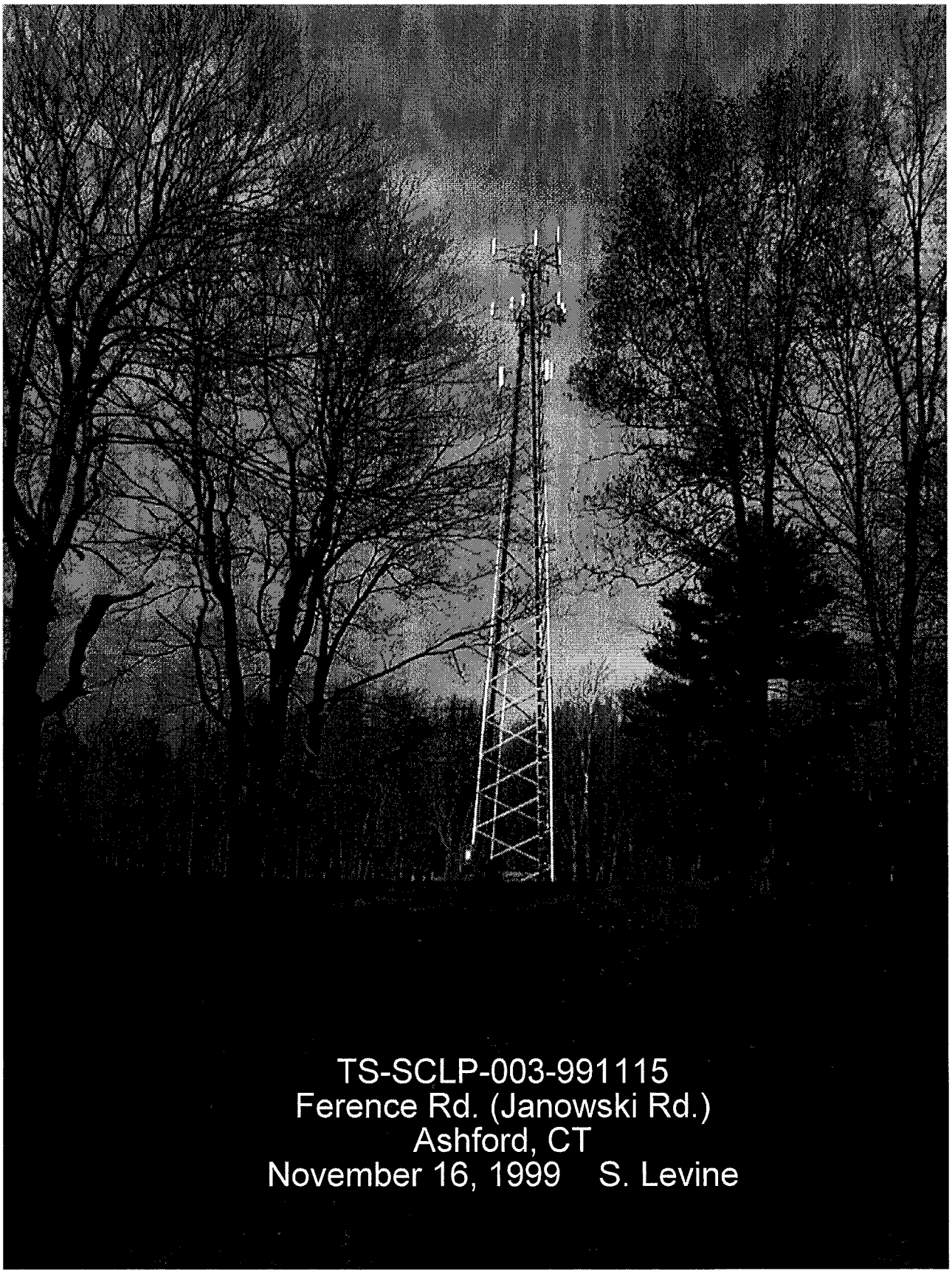
The proposed shared use is to be implemented as specified in your letter dated November 15, 1999.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

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



TS-SCLP-003-991115
Ference Rd. (Janowski Rd.)
Ashford, CT
November 16, 1999 S. Levine

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

November 17, 1999

Honorable John M. Zulick
First Selectman
Town of Ashford
Knowlton Memorial Town Hall
Route 44, 25 Pompey Hollow Road
Ashford, CT 06278

RE: TS-SCLP-003-991115 - Springwich Cellular Limited Partnership request for an order to approve tower sharing at an existing telecommunications facility located at Ference Road in Ashford, Connecticut.

Dear Selectman Zulick:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for Wednesday, December 8, 1999, 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/jlh

Enclosure: Notice of Tower Sharing

Springwich Cellular Limited Partnership

Peter W. van Wilgen
Director - Real Estate Operations

November 15, 1999

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

Springwich Cellular Limited Partnership
Cellular Communication Site – Ference Road, Ashford, Connecticut

Dear Chairman Gelston:

Springwich Cellular Limited Partnership (SCLP) plans to install cellular antennas and a related equipment building at the above facility owned and operated by Sprint Sites USA (Sprint PCS) of 330 Franklin Turnpike, Mahwah, New Jersey, 07430. Please accept this letter as our request to share the existing facility pursuant to C.G.S. Section 16-50aa. A copy of this letter is being sent to the First Selectman of the Town of Ashford.

The existing tower is a 195' lattice tower located on Ference Road in Ashford, Connecticut. Sprint PCS, Nextel Communications and Omnipoint Communications are presently located on the tower. SCLP plans to install up to twelve panel-type cellular antennas at the 140' level of the tower. SCLP will also install a single story equipment building, approximately 12'x26', which will contain radio transmission equipment and extend the existing fence to include its building. (See attached Site Plan)

Power Density Calculations.

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 shows the power density at the site from SCLP's proposed use in relation to the standard.

FREQUENCY	POWER DENSITY	HEIGHT	STANDARD LIMITS (mW/cm2)	% OF STANDARD
SNET Wireless 880 - 894	0.0383730	140'	0.5867	6.5409%
Sprint PCS – 1962.5	0.0135910	195'	1.0000	1.3591%
Nextel - 851	0.0102616	174'	0.5673	1.8087%
Omnipoint – 1,945	0.0104871	150'	1.0000	1.0487%
TOTAL	N/A		N/A	10.76%

As the table demonstrates, SCLP's proposed antennas would contribute 6.5409% of the ANSI standard for the cellular frequency range. Shown above, the total power density is 10.76% as calculated for a mixed frequency site.

Statutory Considerations. C.G.S. §16-50aa provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the Council shall issue an order approving such shared use." (C.G.S. §16-50aa(c)(1).

The shared use of the tower satisfied the criteria stated in C.G.S. §16-50aa as follows:

A. **Technical Feasibility**. The existing tower has been designed and constructed to be structurally sound and capable of supporting all the existing and proposed antennas. The proposed shared use of this tower therefore is technically feasible.

B. **Legal Feasibility**. Under C.G.S. §16-50aa, the Council has been authorized to issue an order approving the proposed-shared use of an existing facility. (C.G.S. §16-50aa(c)(1) This authority complements the Council's prior-existing authority under C.G.S. §16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. §16-50x(a) directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" on ruling of requests for the shared use of tower facilities. Under the authority vested in the Council by C.G.S. §16-50aa, order by the Council approving the shared use would permit the applicant to obtain a building permit for the proposed installation.

C. **Environmental Feasibility**. The proposed shared use would have a minimal environmental effect, for the following reasons:

1. The proposed antenna installation would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics in or around the tower site. In particular, the proposed installation would not increase the height of the existing tower, and would be within Sprint Sites USA's existing leased boundaries of the tower site.

2. The proposed installation would not increase the noise levels at the existing facility by six decibels or more.

3. Operations of antennas at this site would not exceed the total radio frequency electromagnetic radiation power density levels adopted by the State of Connecticut and the FCC as shown above. The "worst-case" exposure levels have also been calculated for ground level, which is an uncontrolled environment since it is generally accessible. The total power density at ground level is only 10.76% of both the ANSI and FCC standards for an uncontrolled environment. As such, the facility would be operated in full and complete compliance with the Federal Telecommunications Act of 1996.

4. The proposed installation would not require any water or sanitary facilities, or generate air emissions or discharges to water bodies. After construction is completed, the proposed installation would not generate any traffic other than periodic maintenance visits. The proposed use of the facility would therefore have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility**. As previously stated, SCLP has entered into an agreement with the facility owner to share use of the existing facility on mutually agreed to terms. The proposed facility sharing is therefore economically feasible.

E. **Public Safety Concerns**. As stated above, the tower is structurally capable of supporting the proposed antennas. The applicant is not aware of any other public safety issues relative to the proposed sharing of the tower. In fact, the provision of new or improved wireless coverage in the area is expected to enhance the safety and welfare of area residents. The proposed-shared use of this facility would likewise improve public safety in the Town of Ashford.

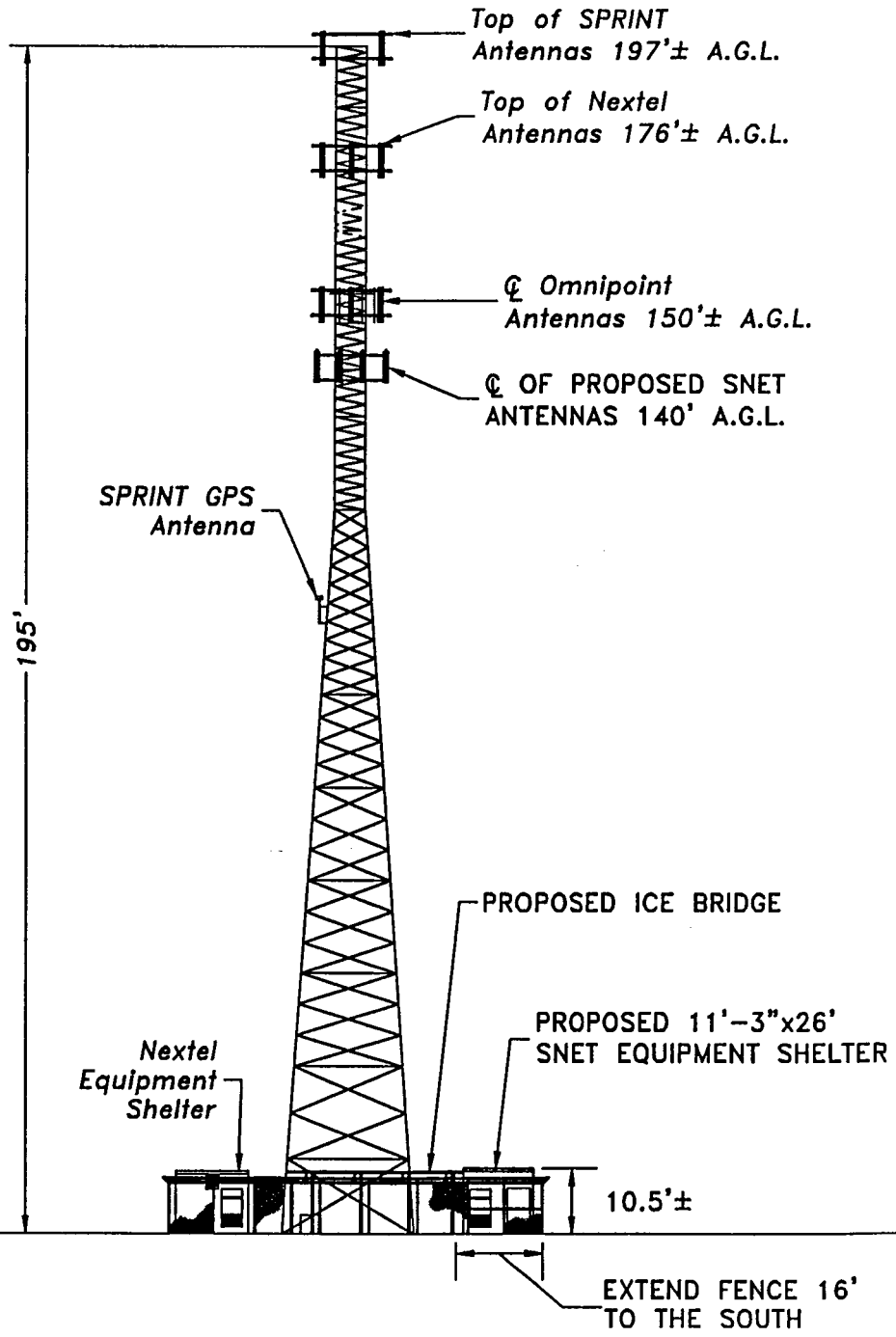
For the foregoing reasons, SCLP respectfully requests that the Council find the proposed shared use of this facility satisfies the criteria stated in C.G.S. Section 16-50aa and issue an order approving this proposed use.

Sincerely,

Peter W. Van Wilgen

cc: Honorable John M. Zulick, First Selectman

RAD. CENTER: 140 FT. (AGL)



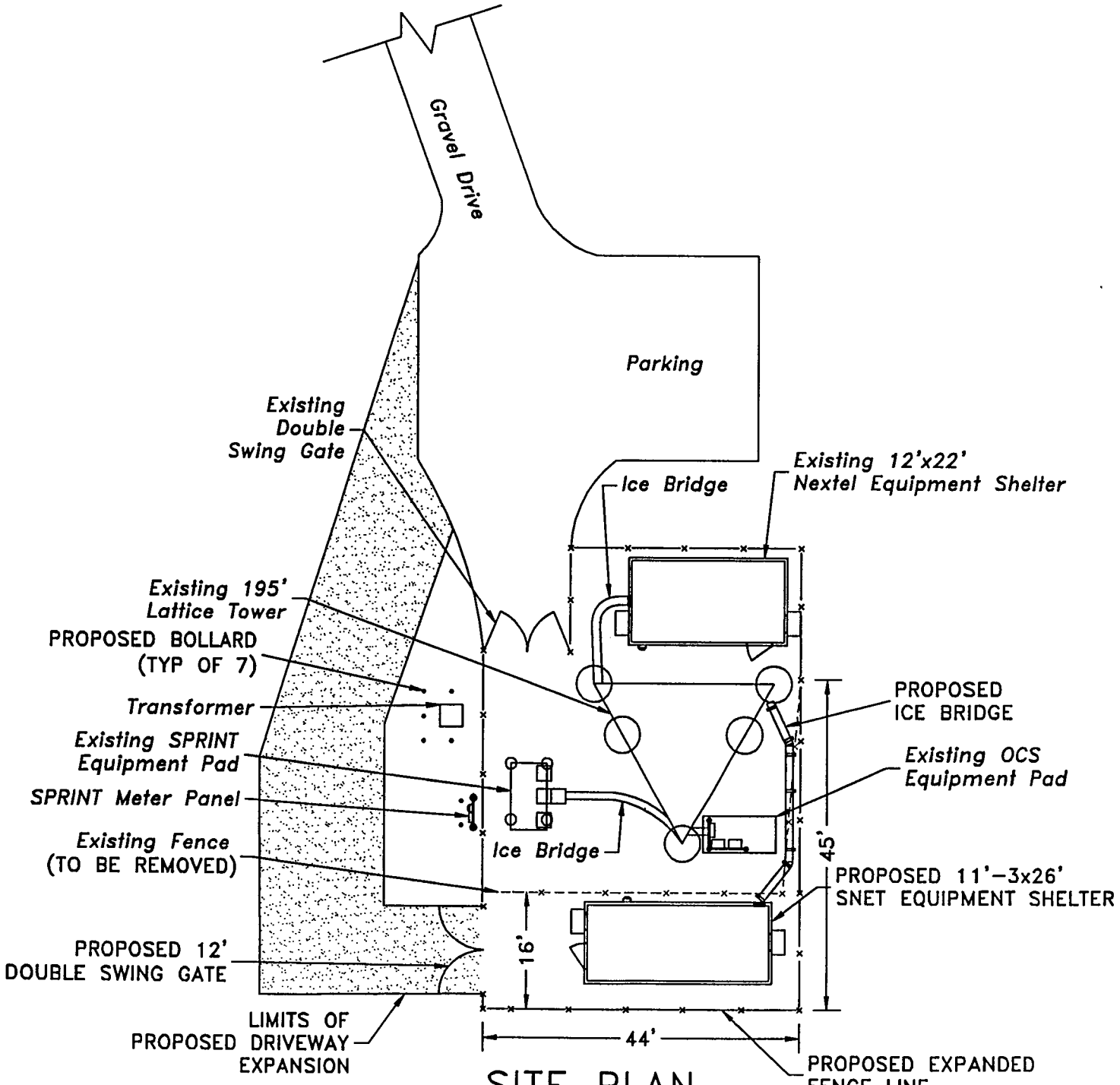
WEST ELEVATION

SCALE: 1"=30'

SNET MOBILITY PRELIMINARY DESIGN EXHIBIT	NORTH	SITE NAME: ASHFORD – SKY HILL TOWER	SNET #:
		ADDRESS: FERENCE ROAD ASHFORD, CT 06278	MGI #: 14777
			TASK #: 2096
		DRAWN: JCH | CHECKED: GMP | SCALE: AS NOTED	DATE: 10/5/99

Maguire Group Inc.
Architects · Engineers · Planners
One Court Street
New Britain, Connecticut 06051

RAD. CENTER: _____FT. (AGL)



SITE PLAN

NOT TO SCALE

SNET MOBILITY PRELIMINARY DESIGN EXHIBIT	NORTH	SITE NAME: ASHFORD – SKY HILL TOWER	SNET #:
		ADDRESS: FERENCE ROAD ASHFORD, CT 06278	MGI #: 14777
		DRAWN: JCH / CHECKED: GMP / SCALE: AS NOTED	TASK #: 2096
			DATE: 10/5/99

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

STRUCTURAL ANALYSIS REPORT
OF
192' SELF-SUPPORTING TOWER
ASHFORD CONNECTICUT

Prepared for Maguire Group, Inc.
MGI No. 14777.7096

HEB

H. Edmund Bergeron

Civil Engineers
Swett Street North Conway, NH 03860
603-356-6936

STRUCTURAL ANALYSIS REPORT
OF
192' SELF-SUPPORTING TOWER
ASHFORD CONNECTICUT

Prepared for Maguire Group, Inc.
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HEB

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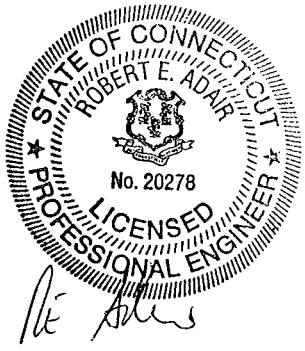
HEB

STRUCTURAL ANALYSIS REPORT
OF
192' SELF-SUPPORTING TOWER
ASHFORD CONNECTICUT

Prepared for Maguire Group, Inc.
MGI No. 14777.7096

November 4, 1999



Prepared by: H. Edmund Bergeron Civil Engineers, P.A.
P.O. Box 440, 20 Swett Street
North Conway, NH 03860
HEB Project No. 99188

H. Edmund Bergeron
Civil Engineers

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HEB

STRUCTURAL ANALYSIS REPORT
of
192' SELF-SUPPORTING TOWER
ASHFORD, CONNECTICUT
prepared for Maguire Group, Inc.

MGI No. 14777.7096

EXECUTIVE SUMMARY:

H. Edmund Bergeron Civil Engineers, P.A. (HEB) performed a structural analysis of this 192-foot ROHN SSV tower. The analysis was performed with the addition of a twelve-panel array of ALP7120.16 panel antennas installed on gate boom mounts at the 140-foot elevation.

Our analysis indicates this tower and its foundations are capable of supporting the proposed antennas.

INTRODUCTION:

A structural analysis of this communications tower was performed by HEB for Maguire Group, Inc. (Maguire). The tower is located in Ashford, Connecticut. HEB did not visit the tower site. This analysis was based on information provided by Maguire, which included design drawings and calculations by ROHN, and antennas proposed by SNET Mobility.

The structure is a 192-foot, galvanized steel, three-legged, self-supporting tower manufactured by UNR-ROHN. This analysis was conducted using the following antenna inventory:

- (1) lightning rod at top of tower
- Sprint: (12) DB980H90 panel antennas with 2-1/4" waveguide cables on 12-foot gate boom mounts at 189'
- Nextel: (12) DB980H90 panel antennas with 1-5/8" waveguide cables on 12-foot gate boom mounts at 170'
- Omnipoint: (6) DAPA 79210 panel antennas with 1-5/8" waveguide cables on (3) 3-foot sidearms at 150'
- Sprint: (1) GPS antenna with 7/8" waveguide cable on a 4-foot sidearm at 98'

HEB

- SNET: (12) ALP7120.16 panel antennas with 1-1/4" waveguide cables on 12-foot gate boom mounts at 140' (proposed)

STRUCTURAL ANALYSIS:

Methodology:

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

The analysis was conducted using a wind speed of 90 miles per hour and one-half inch of radial ice over the entire structure and all appurtenances. The EIA/TIA Standard requires a minimum of 85 miles per hour for Windham County, Connecticut. The tower was analyzed by calculating the resultant wind loading and associated maximum bending moments and axial loads. The moments and forces were used to calculate compressive and shear stresses in leg members, which were compared to allowable stresses according to AISC.

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

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

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

ANALYSIS RESULTS:

Our analysis determined the existing tower and foundation will support the proposed antennas. The following table summarizes the capacity of the tower based on compressive stresses of the leg members:

HEB

Tower Capacity

Elevation	Capacity
0-20'	**92%**
20'-40'	**82%**
40'-60'	**71%**
60'-80'	**78%**
80'-100'	**80%**
100'-120'	**65%**
120'-140'	**71%**
140'-160'	**73%**
160'-180'	**62%**
180'-192'	**14%**

Evaluation of Bracing Members:

Bracing consists of angle members installed in an X-bracing configuration. In this arrangement, each compression member is paired with a matching tension member. Diagonal bracing was determined to be appropriately sized based on a slenderness ratio (effective length divided by the radius of gyration) of 200 or less, as required by paragraph 3.1.12 of EIA/TIA-222-F.

Evaluation of Anchor and Splice Bolts:

Evaluation of the base anchor bolts and each tower section's splice bolts were conducted in accordance with AISC. We found all splice and anchor bolts to be adequately sized.

Analysis of Tower Foundations:

Evaluation of the existing base foundations, which reportedly are drilled caissons, was performed in two ways. Initially, HEB compared design reactions with reactions calculated under the proposed antenna loading. We found the reactions under the proposed loading are less than design reactions, indicating the foundations are adequate to support the proposed loads.

The foundations were then evaluated using spreadsheet software developed by HEB. Using geotechnical information provided by ROHN to calculate skin friction values, we found the caissons are adequately sized to resist uplift forces.

HEB

Base reactions imposed by the proposed antennas were calculated to be as follows:

Tension:	267.2 kips
Compression:	312.1 kips
Shear:	61.8 kips
Overturning Moment:	6469.0 ft-kips

CONCLUSIONS AND SUGGESTIONS:

As detailed above, our analysis indicates that Sprint PCS's 192-foot ROHN self-supporting tower in Ashford, Connecticut is capable of supporting the additional antenna loading proposed.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in new condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Weep holes on tube and pipe members are open.
6. Tower is in plumb condition.
7. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
8. Tower foundations were properly designed and constructed to support design reactions.

H. Edmund Bergeron Civil Engineers, P.A. (HEB) is not responsible for any modifications completed prior to or hereafter which HEB is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating stabilizers.
4. Installing antenna mounting gates or side arms.
5. Extending tower.

HEB

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

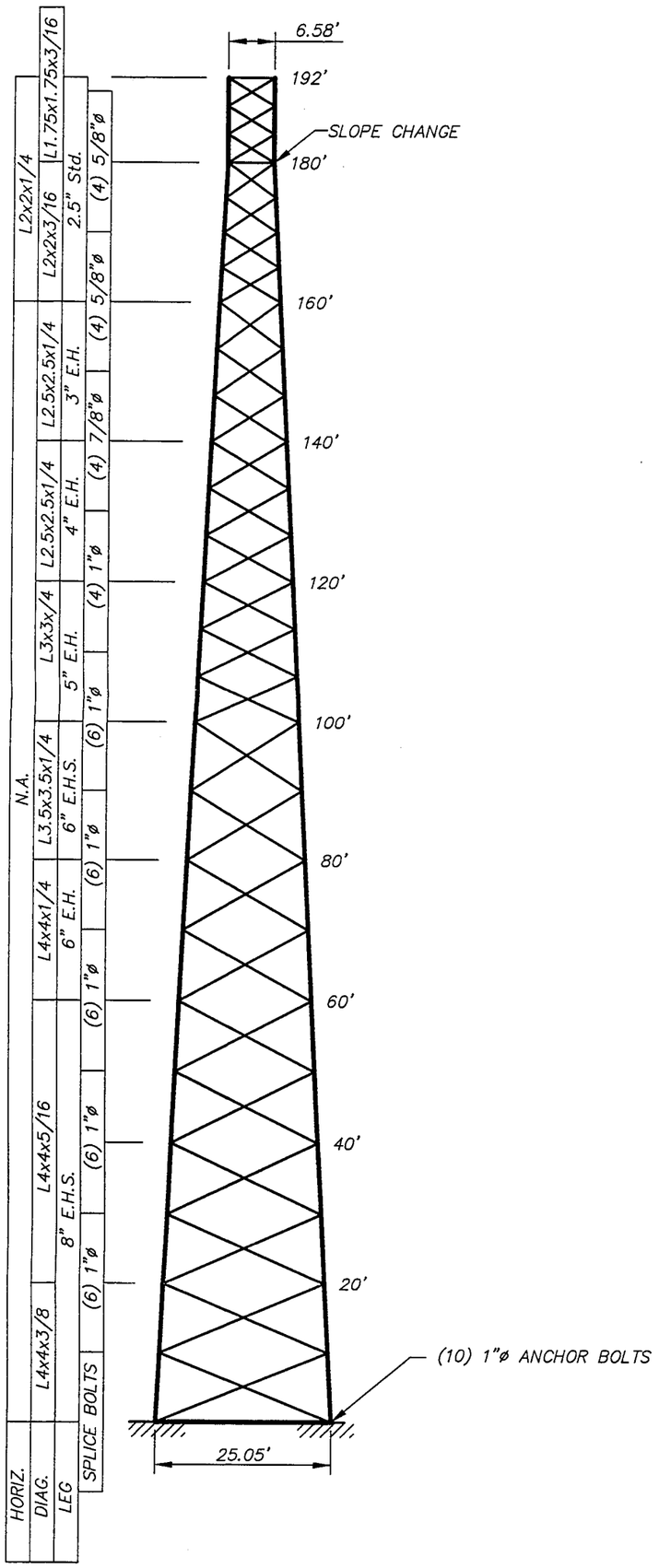
Appendix A

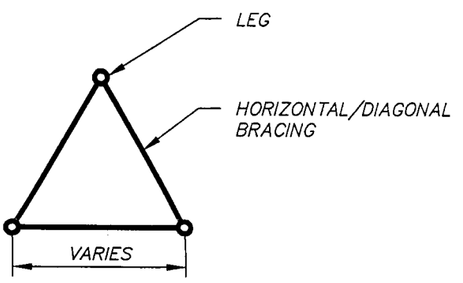
Drawings

ANTENNA INVENTORY

USED FOR STRUCTURAL ANALYSIS

ELEV.	ANTENNA/APPURTENANCE	MOUNT
192'	Lightning rod	Top of Leg
189'	(12) DB980H90 panels	12' gate booms
170'	(12) DB980H90 panels	12' gate booms
150'	(6) DAPA 79210 panels	(3) 3' sidearms
140'	(12) ALP7120.16 panels	12' gate booms
98'	GPS antenna	4' sidearm





TOWER CROSS-SECTION

H.EDMUND BERGERON CIVIL ENGINEERS, P.A. NORTH CONWAY, N.H. (603) 356-6936	192' ROHN SSV TOWER ASHFORD, CT prepared for MAGUIRE GROUP, INC.	FIGURE 1	
		DRWN: REA	SCALE: 1" = 20'
		DATE: 29 OCT 99	PROJ. # 99188

TOWER DESIGN LOADING

DESIGN WIND LOAD PER ANSI/EIA-222-E-1991, 90 MPH BASIC WIND SPEED (1/2" RADIAL ICE LOAD). THIS TOWER IS DESIGNED TO SUPPORT THE FOLLOWING LOADS:

ELEV-ATION (FT)	ANTENNA TYPE	E.P.A. (SF) NO ICE	E.P.A. (SF) W/ICE	LINE SIZE (NOM)
189	(12) DB980H90E-M ON MOUNTING FRAME	114.0 TOTAL	130.0 TOTAL	(12) 2-1/4"
170	(12) ALP9212 W/ MOUNTING FRAME	119.0 TOTAL	145.0 TOTAL	(12) 1-5/8"
150	(12) ALP9212 W/ MOUNTING FRAME	119.0 TOTAL	145.0 TOTAL	(12) 1-5/8"
80	(1) GPS ANTENNA W/ 12' GATE BOOM	28.0 TOTAL	48.0 TOTAL	(1) 7/8"

SEE STRESS ANALYSIS FOR A COMPLETE LISTING OF ALL LOADS ON TOWER

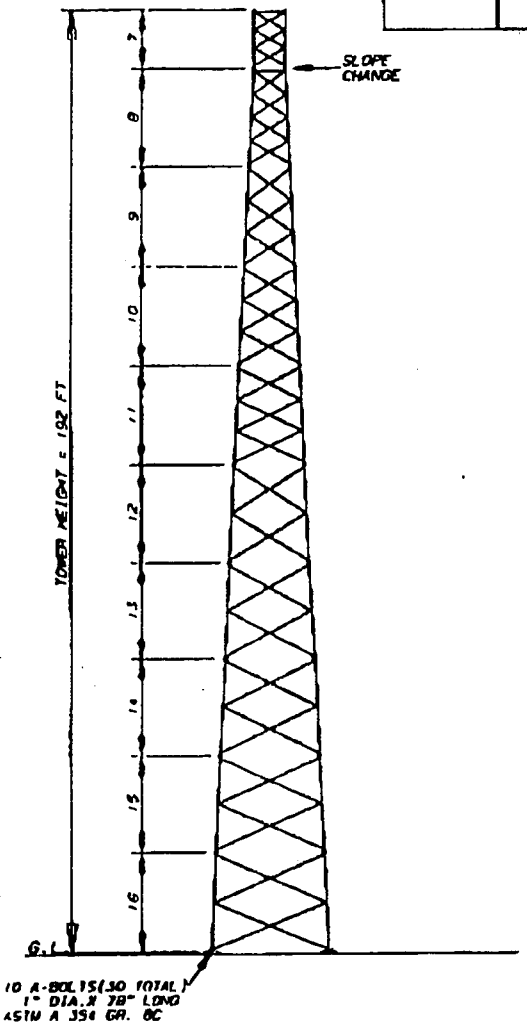
SECTION MEMBER SCHEDULE

SECTION	LEG SIZE	LEG BOLTED FLANGE CONNECTION NO.	LEG BOLTED FLANGE CONNECTION SIZE (IN)	BRACE SIZE	BRACE BOLTED END CONNECTION NO.	BRACE BOLTED END CONNECTION SIZE (IN)
7	PIPE2.5STD	4	5/8	L1.75X1.75X1/8	1	5/8
8	PIPE2.5STD	4	5/8	L2.0X2.0X1/8	1	5/8
9	PIPE 3 E.H	4	7/8	L2.5X2.5X1/4	1	5/8
10	PIPE 3 E.H	4	1	L2.5X2.5X1/4	1	5/8
11	PIPE 3 E.H	8	1	L3.5X3.5X1/4	1	5/8
12	PIPE 3 EXS	8	1	L3.5X3.5X1/4	1	5/8
13	PIPE 4 E.H	8	1	L4X4X1/4	1	5/8
14	PIPE 4 EXS	8	1	L4X4X5/16	1	5/8
15	PIPE 4 EXS	8	1	L4X4X5/16	1	5/8
16	PIPE 4 EXS	10	1	L4X4X5/16	1	5/8

NOTE: SECTION NUMBERS ARE FOR REFERENCE ONLY

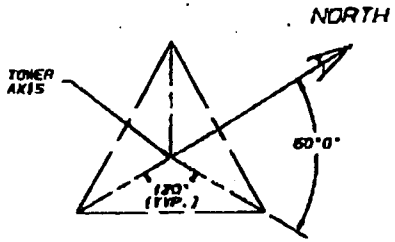
TUBULAR MEMBER PROPERTIES

MEMBER	SIZE O.D. (IN)	SIZE THICK. (IN)
PIPE2.5STD	2.875	0.203
PIPE 3 E.H	3.500	0.300
PIPE 4 E.H	4.500	0.337
PIPE 5 E.H	5.500	0.375
PIPE 6 EXS	6.625	0.340
PIPE 6 E.H	6.625	0.432
PIPE 8 EXS	8.750	0.375



GENERAL NOTES

1. ROHN COMMUNICATION TOWER DESIGNS CONFORM TO E.I.A.-222-E UNLESS OTHERWISE SPECIFIED UNDER TOWER DESIGN LOADING.
2. THE DESIGN LOADING CRITERIA INDICATED HAS BEEN PROVIDED TO ROHN. THE DESIGN LOADING CRITERIA HAS BEEN ASSUMED TO BE BASED ON SITE-SPECIFIC DATA IN ACCORDANCE WITH ANSI/EIA-222-E AND MUST BE VERIFIED BY OTHERS PRIOR TO INSTALLATION.
3. ANTENNAS AND LINES LISTED IN TOWER DESIGN LOADING TABLE ARE PROVIDED BY OTHERS UNLESS OTHERWISE SPECIFIED.
4. TOWER MEMBER DESIGN DOES NOT INCLUDE STRESSES DUE TO ERECTION SINCE ERECTION EQUIPMENT AND CONDITIONS ARE UNKNOWN. DESIGN ASSUMES COMPETENT AND QUALIFIED PERSONNEL WILL ERECT THE TOWER.
5. WORK SHALL BE IN ACCORDANCE WITH E.I.A.-222-E, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
6. THE MINIMUM YIELD STRENGTH OF STRUCTURAL STEEL MEMBERS SHALL BE 50 KSI, EXCEPT AS NOTED BELOW.
   ANGLE BRACES L1.75X1/16 THRU L2-1/2X1/4 SHALL BE 36 KSI.
   STRUCTURAL PLATES SHALL BE 36 KSI.
7. FIELD CONNECTIONS SHALL BE BOLTED. NO FIELD WELDS SHALL BE ALLOWED.
8. STRUCTURAL BOLTS SHALL CONFORM TO ASTM A-325, EXCEPT WHERE NOTED.
9. PAL NUTS SHALL BE PROVIDED FOR ALL TOWER BOLTS.
10. STRUCTURAL STEEL AND CONNECTION BOLTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH E.I.A.-222-E
11. ALL HIGH STRENGTH BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN THE NOVEMBER 13, 1985, AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
12. PURCHASER SHALL VERIFY THE INSTALLATION IS IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR OBSTRUCTION MARKING AND LIGHTING.
13. TOLERANCE ON TOWER STEEL HEIGHT IS EQUAL TO PLUS 1% OR MINUS 1/2%.
14. DESIGN ASSUMES THAT, AS A MINIMUM, MAINTENANCE AND INSPECTION WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE IN ACCORDANCE WITH ANSI/EIA-222-E.
15. DESIGN ASSUMES LEVEL GRADE AT TOWER SITE.
16. DESIGN ASSUMES ALL TYPE ANTENNAS ARE MOUNTED SYMMETRICALLY TO MINIMIZE TORQUE.
17. DESIGN ASSUMES WAVEGUIDES AND WAVEGUIDE LADDERS ARE EQUALLY DISTRIBUTED ON THREE TOWER FACES.
18. STANDARD INSIDE CORNER MOUNTED LADDER WITH ROHN-LOC SAFETY DEVICE SHALL BE PROVIDED FOR CLIMBING THE ENTIRE HEIGHT OF THE TOWER.
19. THREE 15-HOLE WAVEGUIDE LADDERS SHALL BE PROVIDED FROM 10' TO TOP OF TOWER AND (1) 15-HOLE WAVEGUIDE LADDER SHALL BE PROVIDED FROM 10' TO 150' ELEVATION.
20. TOWER ORIENTATION DETERMINED FROM CUSTOMER SUPPLIED PLOT PLAN.
21. FOR FOUNDATION DETAILS, SEE DRAWING NUMBER A963670.



TOWER ORIENTATION
N.T.S.

TOWER REACTIONS

COMPRESSION =	331.9 KIPS
TENSION =	291.6 KIPS
TOTAL SHEAR =	63.0 KIPS
O.T.M. =	6632.7 FT-KIPS

TOWER SITE: SKYHILL (CT03XC204), CT.

No.	Revision Description	Date	By	Chd	Eng	Appd

ROHN

Scale: NONE	By	Date
Drawn:	CSR	12/16/96
Checked:	MA	12/16/96
App. Eng.:		
App. Sales:		

Title: 192' SSV TOWER DESIGN FOR SPRINT SPECTRUM...

END. FILE: 34SA9PH DRAWING NO.: A963669

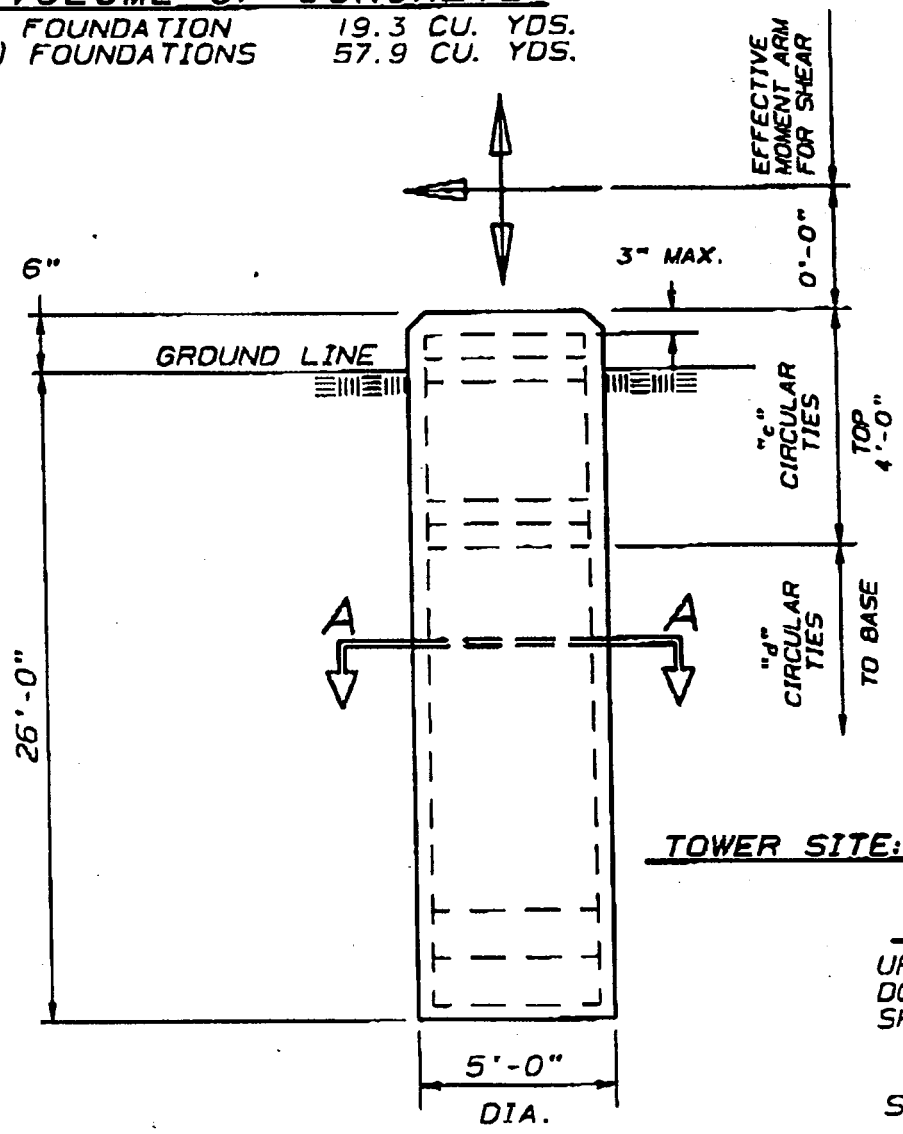
FOUNDATION SCHEDULE

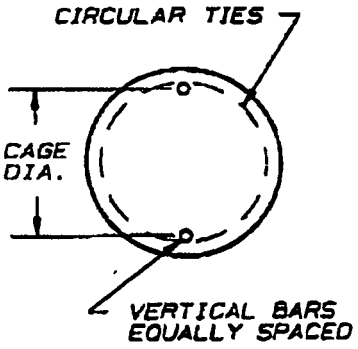
VERTICAL BARS			CIRCULAR TIES					
			"c" TIES			"d" TIES		
SIZE	LAP	CAGE DIA.	SIZE	SPACING	LAP	SIZE	SPACING	LAP
(18) #9	---	51"	#5	3"	27"	#5	12"	27"

NOTE: SEE TOWER ASSEMBLY DRAWING FOR FOUNDATION LAYOUT AND ANCHORAGE EMBEDMENT DRAWING NUMBER.

VOLUME OF CONCRETE

(1) FOUNDATION 19.3 CU. YDS.
(3) FOUNDATIONS 57.9 CU. YDS.





SECTION A-A

NOTE:
CAGE DIA. FROM CENTERLINE OF VERTICAL BARS.

TOWER SITE: SKYHILL (CT03XC204), CT.

REACTIONS/LEG

UPLIFT	=	291.6 KIPS
DOWNLOAD	=	331.9 KIPS
SHEAR	=	42.0 KIPS

SHEET 1 OF 3

No. ▲ Revision Description	▲ Date	▲ Rev By	▲ Ckd By	▲ Appd By

ROHN

Scale: NONE	By	Date
Drawn:	CSR	12/16/96
Checked:	HA	12/16/96
App. Eng.:	XK	12/16/96
App. Sales:	SM	12/16/96

Title: DRILLED PIER FOUNDATION DETAIL FOR SPRINT SPECTRUM

ENG. FILE: 34589PH DRAWING NO.: A963670-1

Appendix B

Calculations

H. EDMUND BERGERON CIVIL ENGINEERS, P.A.
20 Swett Street, PO Box 440
North Conway, NH 03860
(603) 356-6936

Client: **Maguire Group**
Job: **Ashford, CT** Job No.: **99188**

Calculated By: **R. Adair** Date: **28-Oct-99**
Checked By: JG Date: 11/2/99

General Information

Tower Manufacturer	ROHN	
Tower Type	Self-supporting Tower	
Total Height of Tower	192	ft.
Wind Speed	90	mph.
Radial Ice	0.5	in.
75% Reduction for ice	yes	(yes or no)
1/3 increase for allowable loads	yes	(yes or no)
Number of faces	3	faces

Antenna Force Calculations based on EIA/TIA-222-F, using the following formulas:
Force on discrete appurtenance: F=Qz*Gh*Ca*A
Force on microwave antennae: F=Cr*A*Gh*Kz*V^2, where Cr=((Ca^2)+(Cs^2))^(1/2)
Gh=.65+.60/(h/33)^(1/7) = Gh= 1.12
V as specified EIA-222-F

Fy	50	ksi
E (Modulus of Elasticity)	29000	ksi
Fb	0.6	
K	1	

Section No.	Section Length	Leg Spread @ Base of section	Leg Size (Description)	Width of Leg to Wind	Leg Properties			Shape (round =R flat =F)
					Area	r_z	Unbraced Lengths	
1	20	25.05	8" E.H.S.	8.75	9.87	2.96	120.00	R
2	20	23.05	8" E.H.S.	8.75	9.87	2.96	120.00	R
3	20	21.13	8" E.H.S.	8.75	9.87	2.96	120.00	R
4	20	18.88	6" E.H.	6.63	8.40	2.19	120.00	R
5	20	16.92	6" E.H.S.	6.63	6.71	2.23	120.00	R
6	20	14.83	5" E.H.	5.56	6.11	1.84	80.00	R
7	20	12.74	4" E.H.	4.50	4.41	1.48	80.00	R
8	20	10.61	3" E.H.	3.50	3.02	1.14	80.00	R
9	20	8.54	2.5" STD.	2.88	1.70	0.95	60.00	R
10	12	6.58	2.5" STD.	2.88	1.70	0.95	48.00	R
top		6.58						

192

H. EDMUND BERGERON CIVIL ENGINEERS, P.A.
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Client: **Maguire Group**
Job: **Ashford, CT** Job No.: **99188**

Calculated By: **R. Adair** Date: **28-Oct-99**
Checked By: JG Date: 11/2/99

Tower Summary

Section ***1*** ***type***

Ag = 496 sf z = 10 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	8.8	29.2	32.5	33.6	2015.1	338.9
				0.0	0.0		0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	4	26.0	4.0	34.7	43.3	9.8	3057.6	1092.0
				0.0	0.0		0.0	0.0

Section ***2*** ***type***

Ag = 456 sf z = 30 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	8.8	29.2	32.5	33.6	2015.1	338.9
				0.0	0.0		0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	4	24.2	4.0	32.2	40.3	8.2	2376.4	1014.3
				0.0	0.0		0.0	0.0

Section ***3*** ***type***

Ag = 415 sf z = 50 ft

	3	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	8.8	29.2	32.5	33.6	2015.1	338.9
				0.0	0.0		0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	4	22.1	4.0	29.5	36.8	8.2	2174.6	928.2
				0.0	0.0		0.0	0.0

Section 4 — type

Ag = 369 sf — z = 70 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	6.6	22.1	25.4	28.6	1715.0	261.0
				0.0	0.0		0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	4	20.5	4.0	27.3	34.1	6.6	1619.6	858.9
				0.0	0.0		0.0	0.0

Section 5 — type

Ag = 329 sf — z = 90 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	6.6	22.1	25.4	22.8	1370.0	261.0
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	4	18.8	3.5	21.9	28.1	5.8	1305.0	700.0
				0.0	0.0		0.0	0.0

Section 6 — type

Ag = 285 sf — z = 110 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	5.6	18.5	21.9	20.8	1247.5	222.1
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	6	15.3	3.0	23.0	30.6	4.9	1349.5	749.7
				0.0	0.0		0.0	0.0

Section 7 — type

Ag = 241 sf — z = 130 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	4.5	15.0	18.3	15.0	900.4	183.2
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	6	13.5	2.5	16.9	23.6	4.1	996.3	567.0
Horizontal				0.0	0.0		0.0	0.0

Section 8 — type

Ag = 197 sf — z = 150 ft

	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	3.5	11.7	15.0	10.3	616.6	146.5
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	6	11.7	2.5	14.6	20.5	4.1	863.5	491.4

Section	9				type			
Ag =	156 sf			z =	170 ft			
	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	20.0	2.9	9.6	12.9	5.8	347.1	123.6
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	8	9.1	2.0	12.1	18.2	2.4	532.9	424.7
Horizontal	1	6.3	2.0	1.1	1.6	3.2		

Section	10				type			
Ag =	82 sf			z =	186 ft			
	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	12.0	2.9	5.8	7.8	5.8	208.3	74.2
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal	6	7.7	1.8	6.7	10.6	2.1	293.8	242.6
Horizontal	1	6.3	2.0	1.1	1.6	3.2	60.9	37.0

Section	top				type			
Ag =	0 sf			z =	192 ft			
	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diagonal				0.0	0.0		0.0	0.0
Horizontal				0.0	0.0		0.0	0.0

Section					type			
Ag =	0 sf			z =	192 ft			
	Quantity Per Face	Length (ft.)	Width (in.)	Area (sf)	Area w/ ice	Wt. Per ft.	Wt. (lbs.) Tower	Wt. (lbs.) Ice
Round Members								
Leg	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
Flat Members								
Leg	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0.0	0.0		0.0	0.0
				0.0	0.0		0.0	0.0

Notes:

1. Ag is gross area of tower.
2. z is height above ground to mid-point of section.

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Client:	**Maguire Group**		
Job:	**Ashford, CT**	Job No.:	**99188**
Calculated By:	**R. Adair**	Date:	**28-Oct-99**
Checked By:	JG	Date:	11/2/99

Antennas

Type	Elev. (z)	Coeff. (C)	Kz	Qz	Area (no ice)	Area (ice)	Force (no ice)	Force (ice)	Weight (no ice)	Weight (w/ ice)	Orient	Ca	Cs
			1.00	20.74			**0**	**0**					
Lightning Rod	192	1.2	1.65	34.30	1.4	2.3	**66**	**104**	55	95			
(12) DB980H90	189	1.4	1.65	34.14	54.1	65.7	**2887**	**3509**	1260	1500			
on 12' gate booms			1.00	20.74			**0**	**0**					
(12) DB980H90	170	1.4	1.60	33.12	54.1	65.7	**2801**	**3404**	1260	1500			
on 12' gate booms			1.00	20.74			**0**	**0**					
(6) DAPA79210	150	1.4	1.54	31.96	37.4	41.6	**1868**	**2079**	360	550			
on (3) 3' sidearms			1.00	20.74			**0**	**0**					
GPS on 4' sidearm	98	0.8	1.36	28.30	1.3	1.8	**34**	**45**	50	75			
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
			1.00	20.74			**0**	**0**					
Dishes											Orient	Ca	Cs
		0.00000	1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**			0		
		0.00000	1.00	20.74			**0**	**0**			0		
Proposed Antennae													
(12) ALP7120.16	140	1.4	1.51	31.34	60.1	70.5	**2944**	**3455**	1380	1550			
on 12' gate booms			1.00	20.74			**0**	**0**					
		0.00000	1.00	20.74			**0**	**0**			0		

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Calculated By: **R. Adair**
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Job No.: **99188**
Date: **28-Oct-99**
Date: 11/2/99

Existing Wind Load Without Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Aa	Df	Dr	Ca									
1	10	495.6	34.7	29.2	51.5	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.85	**5451 lbs.**	20	**273 lbs/ft.**
2	30	456.4	32.2	29.2	49.1	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.83	**5265 lbs.**	20	**263 lbs/ft.**
3	50	414.7	29.5	29.2	46.4	73.76	1	1	1.2	0.58	1.13	23.35	1.12	0.14	2.80	**5698 lbs.**	20	**285 lbs/ft.**
4	70	369.0	27.3	22.1	40.1	73.76	1	1	1.2	0.58	1.24	25.71	1.12	0.13	2.83	**5797 lbs.**	20	**290 lbs/ft.**
5	90	328.5	21.9	22.1	34.7	73.59	1	1	1.2	0.58	1.33	27.62	1.12	0.13	2.83	**5751 lbs.**	20	**288 lbs/ft.**
6	110	285.0	23.0	18.5	33.7	72.09	1	1	1.2	0.58	1.41	29.25	1.12	0.15	2.79	**5895 lbs.**	20	**295 lbs/ft.**
7	130	241.0	16.9	15.0	25.6	72.09	1	1	1.2	0.58	1.48	30.68	1.12	0.13	2.84	**5448 lbs.**	20	**272 lbs/ft.**
8	150	197.3	14.6	11.7	21.4	68.79	1	1	1.2	0.58	1.54	31.96	1.12	0.13	2.83	**5108 lbs.**	20	**255 lbs/ft.**
9	170	156.0	13.2	9.6	18.8	58.89	1	1	1.2	0.58	1.60	33.12	1.12	0.15	2.79	**4546 lbs.**	20	**227 lbs/ft.**
10	186	81.8	7.8	5.8	11.2	24.63	1	1	1.2	0.58	1.64	33.99	1.12	0.17	2.72	**2270 lbs.**	12	**189 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

Existing Wind Load With Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Ai	Df	Dr	Ca									
1	10	495.6	43.3	32.5	62.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.15	2.76	**6290 lbs.**	20	**314 lbs/ft.**
2	30	456.4	40.3	32.5	59.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.16	2.74	**6063 lbs.**	20	**303 lbs/ft.**
3	50	414.7	36.8	32.5	55.8	83.19	1	1	1.2	0.58	1.13	23.35	1.12	0.17	2.71	**6546 lbs.**	20	**327 lbs/ft.**
4	70	369.0	34.1	25.4	48.9	83.19	1	1	1.2	0.58	1.24	25.71	1.12	0.16	2.73	**6698 lbs.**	20	**335 lbs/ft.**
5	90	328.5	28.1	25.4	43.0	82.86	1	1	1.2	0.58	1.33	27.62	1.12	0.16	2.72	**6675 lbs.**	20	**334 lbs/ft.**
6	110	285.0	30.6	21.9	43.4	79.86	1	1	1.2	0.59	1.41	29.25	1.12	0.18	2.65	**6890 lbs.**	20	**344 lbs/ft.**
7	130	241.0	23.6	18.3	34.4	79.86	1	1	1.2	0.59	1.48	30.68	1.12	0.17	2.68	**6443 lbs.**	20	**322 lbs/ft.**
8	150	197.3	20.5	15.0	29.3	76.28	1	1	1.2	0.59	1.54	31.96	1.12	0.18	2.66	**6050 lbs.**	20	**303 lbs/ft.**
9	170	156.0	19.8	12.9	27.4	65.83	1	1	1.2	0.59	1.60	33.12	1.12	0.21	2.56	**5524 lbs.**	20	**276 lbs/ft.**
10	186	81.8	12.2	7.8	16.8	28.38	1	1	1.2	0.60	1.64	33.99	1.12	0.24	2.46	**2861 lbs.**	12	**238 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

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Existing Wind Load Without Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Aa	Df	Dr	Ca									
1	10	495.6	34.7	29.2	51.5	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.85	**5451 lbs.**	20	**273 lbs/ft.**
2	30	456.4	32.2	29.2	49.1	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.83	**5265 lbs.**	20	**263 lbs/ft.**
3	50	414.7	29.5	29.2	46.4	73.76	1	1	1.2	0.58	1.13	23.35	1.12	0.14	2.80	**5698 lbs.**	20	**285 lbs/ft.**
4	70	369.0	27.3	22.1	40.1	73.76	1	1	1.2	0.58	1.24	25.71	1.12	0.13	2.83	**5797 lbs.**	20	**290 lbs/ft.**
5	90	328.5	21.9	22.1	34.7	73.59	1	1	1.2	0.58	1.33	27.62	1.12	0.13	2.83	**5751 lbs.**	20	**288 lbs/ft.**
6	110	285.0	23.0	18.5	33.7	72.09	1	1	1.2	0.58	1.41	29.25	1.12	0.15	2.79	**5895 lbs.**	20	**295 lbs/ft.**
7	130	241.0	16.9	15.0	25.6	72.09	1	1	1.2	0.58	1.48	30.68	1.12	0.13	2.84	**5448 lbs.**	20	**272 lbs/ft.**
8	150	197.3	14.6	11.7	21.4	68.79	1	1	1.2	0.58	1.54	31.96	1.12	0.13	2.83	**5108 lbs.**	20	**255 lbs/ft.**
9	170	156.0	13.2	9.6	18.8	58.89	1	1	1.2	0.58	1.60	33.12	1.12	0.15	2.79	**4546 lbs.**	20	**227 lbs/ft.**
10	186	81.8	7.8	5.8	11.2	24.63	1	1	1.2	0.58	1.64	33.99	1.12	0.17	2.72	**2270 lbs.**	12	**189 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

Existing Wind Load With Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Ai	Df	Dr	Ca									
1	10	495.6	43.3	32.5	62.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.15	2.76	**6290 lbs.**	20	**314 lbs/ft.**
2	30	456.4	40.3	32.5	59.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.16	2.74	**6063 lbs.**	20	**303 lbs/ft.**
3	50	414.7	36.8	32.5	55.8	83.19	1	1	1.2	0.58	1.13	23.35	1.12	0.17	2.71	**6546 lbs.**	20	**327 lbs/ft.**
4	70	369.0	34.1	25.4	48.9	83.19	1	1	1.2	0.58	1.24	25.71	1.12	0.16	2.73	**6698 lbs.**	20	**335 lbs/ft.**
5	90	328.5	28.1	25.4	43.0	82.86	1	1	1.2	0.58	1.33	27.62	1.12	0.16	2.72	**6675 lbs.**	20	**334 lbs/ft.**
6	110	285.0	30.6	21.9	43.4	79.86	1	1	1.2	0.59	1.41	29.25	1.12	0.18	2.65	**6890 lbs.**	20	**344 lbs/ft.**
7	130	241.0	23.6	18.3	34.4	79.86	1	1	1.2	0.59	1.48	30.68	1.12	0.17	2.68	**6443 lbs.**	20	**322 lbs/ft.**
8	150	197.3	20.5	15.0	29.3	76.28	1	1	1.2	0.59	1.54	31.96	1.12	0.18	2.66	**6050 lbs.**	20	**303 lbs/ft.**
9	170	156.0	19.8	12.9	27.4	65.83	1	1	1.2	0.59	1.60	33.12	1.12	0.21	2.56	**5524 lbs.**	20	**276 lbs/ft.**
10	186	81.8	12.2	7.8	16.8	28.38	1	1	1.2	0.60	1.64	33.99	1.12	0.24	2.46	**2861 lbs.**	12	**238 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

H. EDMUND BERGERON CIVIL ENGINEERS, P.A.
20 Swett Street, PO Box 440
North Conway, NH 03860
(603) 356-6936

Client: **Maguire Group**
Job: **Ashford, CT**
Calculated By: **R. Adair**
Checked By: JG

Job No.: **99188**
Date: **28-Oct-99**
Date: 11/2/99

Proposed Wind Load Without Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Aa	Df	Dr	Ca									
1	10	495.6	34.7	29.2	51.5	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.85	**5451 lbs.**	20	**273 lbs/ft.**
2	30	456.4	32.2	29.2	49.1	73.76	1	1	1.2	0.58	1.00	20.74	1.12	0.13	2.83	**5265 lbs.**	20	**263 lbs/ft.**
3	50	414.7	29.5	29.2	46.4	73.76	1	1	1.2	0.58	1.13	23.35	1.12	0.14	2.80	**5698 lbs.**	20	**285 lbs/ft.**
4	70	369.0	27.3	22.1	40.1	73.76	1	1	1.2	0.58	1.24	25.71	1.12	0.13	2.83	**5797 lbs.**	20	**290 lbs/ft.**
5	90	328.5	21.9	22.1	34.7	73.59	1	1	1.2	0.58	1.33	27.62	1.12	0.13	2.83	**5751 lbs.**	20	**288 lbs/ft.**
6	110	285.0	23.0	18.5	33.7	72.09	1	1	1.2	0.58	1.41	29.25	1.12	0.15	2.79	**5895 lbs.**	20	**295 lbs/ft.**
7	130	241.0	16.9	15.0	25.6	72.09	1	1	1.2	0.58	1.48	30.68	1.12	0.13	2.84	**5448 lbs.**	20	**272 lbs/ft.**
8	150	197.3	14.6	11.7	21.4	68.79	1	1	1.2	0.58	1.54	31.96	1.12	0.13	2.83	**5108 lbs.**	20	**255 lbs/ft.**
9	170	156.0	13.2	9.6	18.8	58.89	1	1	1.2	0.58	1.60	33.12	1.12	0.15	2.79	**4546 lbs.**	20	**227 lbs/ft.**
10	186	81.8	7.8	5.8	11.2	24.63	1	1	1.2	0.58	1.64	33.99	1.12	0.17	2.72	**2270 lbs.**	12	**189 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

Proposed Wind Load With Ice

Section	Midpoint Height	Areas					Factors			Rr	Kz	Qz	Gh	e	Cf	Wind Load	Section Length	Uniform Load
		Gross	Flats	Rounds	Ae	Ai	Df	Dr	Ca									
1	10	495.6	43.3	32.5	62.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.15	2.76	**6290 lbs.**	20	**314 lbs/ft.**
2	30	456.4	40.3	32.5	59.2	83.19	1	1	1.2	0.58	1.00	20.74	1.12	0.16	2.74	**6063 lbs.**	20	**303 lbs/ft.**
3	50	414.7	36.8	32.5	55.8	83.19	1	1	1.2	0.58	1.13	23.35	1.12	0.17	2.71	**6546 lbs.**	20	**327 lbs/ft.**
4	70	369.0	34.1	25.4	48.9	83.19	1	1	1.2	0.58	1.24	25.71	1.12	0.16	2.73	**6698 lbs.**	20	**335 lbs/ft.**
5	90	328.5	28.1	25.4	43.0	82.86	1	1	1.2	0.58	1.33	27.62	1.12	0.16	2.72	**6675 lbs.**	20	**334 lbs/ft.**
6	110	285.0	30.6	21.9	43.4	79.86	1	1	1.2	0.59	1.41	29.25	1.12	0.18	2.65	**6890 lbs.**	20	**344 lbs/ft.**
7	130	241.0	23.6	18.3	34.4	79.86	1	1	1.2	0.59	1.48	30.68	1.12	0.17	2.68	**6443 lbs.**	20	**322 lbs/ft.**
8	150	197.3	20.5	15.0	29.3	76.28	1	1	1.2	0.59	1.54	31.96	1.12	0.18	2.66	**6050 lbs.**	20	**303 lbs/ft.**
9	170	156.0	19.8	12.9	27.4	65.83	1	1	1.2	0.59	1.60	33.12	1.12	0.21	2.56	**5524 lbs.**	20	**276 lbs/ft.**
10	186	81.8	12.2	7.8	16.8	28.38	1	1	1.2	0.60	1.64	33.99	1.12	0.24	2.46	**2861 lbs.**	12	**238 lbs/ft.**
top	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**
	192	0.0	0.0	0.0	0.0	0.00	1	1	1.2	0.57	1.65	34.30	1.12	0.00	3.40	**0 lbs.**	0	**#DIV/0! lbs/ft.**

H. EDMUND BERGERON CIVIL ENGINEERS, P.A.
20 Swett Street, PO Box 440
North Conway, NH 03860
(603) 356-6936

Client: **Maguire Group**
Job: **Ashford, CT** Job No.: **99188**

Calculated By: **R. Adair** Date: **28-Oct-99**
Checked By: JG Date: 11/2/99

Uplift Due to Moment Minus 1/3 Dead & Ice Loads

	Existing			*Proposed*		
	W_o-DL	.75W_I-DL-I	W_I-DL-I	W_o-DL	.75W_I-DL-I	W_I-DL-I
Elev.	Force	Force	Force	Force	Force	Force
0	248.2	204.5	287.4	267.2	221.2	309.7
20	221.6	183.7	257.3	239.3	199.3	278.0
40	193.2	161.2	225.0	209.3	175.3	243.9
60	167.8	141.1	196.2	182.2	153.7	213.1
80	138.8	117.3	162.8	150.9	128.0	177.0
100	110.5	94.0	130.2	119.7	102.0	141.0
120	82.5	70.7	97.7	87.9	75.4	104.0
140	54.2	46.6	64.5	54.2	46.6	64.5
160	26.9	23.1	32.2	26.9	23.1	32.2
180	6.0	4.9	7.1	6.0	4.9	7.1
192	0.0	0.0	0.0	0.0	0.0	0.0
1000	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Tension in Bolts

		Existing			*Proposed*		
		W_o-DL	.75W_I-DL-I	W_I-DL-I	W_o-DL	.75W_I-DL-I	W_I-DL-I
Elev.	# of Bolts	Tension/Bolt	Tension/Bolt	Tension/Bolt	Tension/Bolt	Tension/Bolt	Tension/Bolt
0	10	24.82	20.45	28.74	26.72	22.12	30.97
20	6	36.93	30.62	42.88	39.88	33.21	46.34
40	6	32.21	26.86	37.51	34.89	29.22	40.65
60	6	27.97	23.51	32.70	30.37	25.62	35.51
80	6	23.13	19.56	27.14	25.14	21.33	29.50
100	6	18.42	15.66	21.70	19.95	17.01	23.49
120	4	20.63	17.67	24.42	21.96	18.84	25.99
140	4	13.55	11.66	16.14	13.55	11.66	16.14
160	4	6.72	5.79	8.06	6.72	5.79	8.06
180	4	1.50	1.23	1.78	1.50	1.23	1.78
192		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1000		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Maximum Shear in Bolts

		Existing			*Proposed*		
Elev.	(dia.)	W_o	.75W_I	W_I	W_o	.75W_I	W_I
0	1	1.96	1.73	2.31	2.06	1.82	2.42
20	1	3.27	2.88	3.84	3.43	3.03	4.04
40	1	3.27	2.88	3.84	3.43	3.03	4.04
60	1	3.15	2.76	3.68	3.31	2.91	3.88
80	1	2.89	2.53	3.38	3.06	2.68	3.57
100	1	2.61	2.28	3.04	2.77	2.42	3.23
120	1	3.46	3.02	4.02	3.70	3.23	4.31
140	7/8	2.97	2.59	3.45	2.97	2.59	3.45
160	5/8	2.33	2.04	2.72	2.33	2.04	2.72
180	5/8	1.61	1.41	1.88	1.61	1.41	1.88
192		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1000		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

H. EDMUND BERGERON CIVIL ENGINEERS, P.A.
20 Swett Street, PO Box 440
North Conway, NH 03860
(603) 356-6936

Client: **Maguire Group**
Job: **Ashford, CT** Job No.: **99188**

Calculated By: **R. Adair** Date: **28-Oct-99**
Checked By: JG Date: 11/2/99

Evaluation of Bracing Members

Center Bolted? Yes

Section	Member	K Value	Length (ft.)	r_x (in.)	r_z (in.)	kL/r_x	kL/r_z
1	L4 x 3/8	1.0	25.78	1.230	0.788	188.6	196.3
2	L4 x 5/16	1.0	23.88	1.240	0.791	173.3	181.1
3	L4 x 5/16	1.0	21.68	1.240	0.791	157.4	164.5
4	L4 x 1/4	1.0	20.35	1.250	0.795	146.5	153.6
5	L3.5 x 1/4	1.0	18.65	1.090	0.694	154.0	161.2
6	L3 x 1/4	1.0	15.73	0.930	0.592	152.2	159.4
7	L2.5 x 1/4	1.0	14.03	0.769	0.491	164.1	171.4
8	L2.5 x 1/4	1.0	12.31	0.769	0.491	144.1	150.4
9	L2 x 3/16	1.0	9.46	0.617	0.394	138.0	144.1
10	L1.75 x 3/16	1.0	6.96	0.537	0.343	116.7	121.8

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Client: **Maguire Group**
Job: **Ashford, CT** Job No.: **99188**

Calculated By: **R. Adair** Date: **28-Oct-99**
Checked By: JG Date: 11/2/99

Evaluation of Leg Members

						Existing		*Proposed*	
Section	Size	Kl/r	Cc	Fa allow	133% Allow	$D+W_o$	D+.75Wl+l	$D+W_o$	l
1	8" E.H.S.	40.49	106.94	25.76	34.35	29.59	27.21	31.63	29.10
2	8" E.H.S.	40.49	106.94	25.76	34.35	26.14	24.08	28.03	25.83
3	8" E.H.S.	40.49	106.94	25.76	34.35	22.61	20.87	24.33	22.46
4	6" E.H.	54.79	106.94	23.58	31.44	22.80	21.09	24.61	22.76
5	6" E.H.S.	53.93	106.94	23.72	31.63	23.46	21.77	25.37	23.52
6	5" E.H.	43.48	106.94	25.33	33.77	20.45	19.04	22.05	20.51
7	4" E.H.	54.05	106.94	23.70	31.60	21.04	19.68	22.38	20.91
8	3" E.H.	70.18	106.94	20.90	27.86	20.30	19.14	20.30	19.14
9	2.5" STD.	63.36	106.94	22.13	29.51	18.35	17.53	18.35	17.53
10	2.5" STD.	50.69	106.94	24.24	32.32	4.60	4.49	4.60	4.49
top	0.00	#DIV/0!	106.94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	0.00	#DIV/0!	106.94	#DIV/0!	#DIV/0!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Percent Capacity

		Existing		*Proposed*			*Maximum*		
Section	Elev.	$D+W_o$	l	Secondary	$D+W_o$	D+.75Wl+l	Secondary	Existing	Proposed
1	0	86%	*79%*	0%	*92%*	*85%*	0%	***86%***	***92%***
2	20	76%	*70%*	0%	*82%*	*75%*	0%	***76%***	***82%***
3	40	66%	*61%*	0%	*71%*	*65%*	0%	***66%***	***71%***
4	60	73%	*67%*	0%	*78%*	*72%*	0%	***73%***	***78%***
5	80	74%	*69%*	0%	*80%*	*74%*	0%	***74%***	***80%***
6	100	61%	*56%*	0%	*65%*	*61%*	0%	***61%***	***65%***
7	120	67%	*62%*	0%	*71%*	*66%*	0%	***67%***	***71%***
8	140	73%	*69%*	0%	*73%*	*69%*	0%	***73%***	***73%***
9	160	62%	*59%*	0%	*62%*	*59%*	0%	***62%***	***62%***
10	180	14%	*14%*	0%	*14%*	*14%*	0%	***14%***	***14%***
top	192	#DIV/0!	*#DIV/0!*	#DIV/0!	*#DIV/0!*	*#DIV/0!*	#DIV/0!	***#DIV/0!***	***#DIV/0!***
	1000	#VALUE!	*#VALUE!*	#DIV/0!	*#VALUE!*	*#VALUE!*	#DIV/0!	***#VALUE!***	***#VALUE!***

Maximum Reactions:

Uplift: **267.2 kips**
Compression: **312.1 kips**
Total Shear: **61.8 kips**
Overturning Moment: **6469.0 ft-kips**

FROM SCLP

Salem-East Haddam Rd.	41 28 6.3	72 16 24
Berlin-Kensington Rd.	41 37 34	72 46 34
Rocky Hill-Main St	41 40 05	72 46 34
Branford-Acorn Rd.	41 17 35	72 45 48
Ashford-Ference Rd.	41 57 07	72 11 46
Middletown-Saybrook Rd.	41 30 38	72 35 38