# STATE OF CONNECTICUT

*CONNECTICUT SITING COUNCIL*

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


September 2, 1998

Ms. Sandy M. Carter
Regulatory Manager
Bell Atlantic Mobile
20 Alexander Drive, P.O. Box 5029
Wallingford, CT 06492

Re: EM-BAM-086-980821 - Bell Atlantic Mobile notice of intent to modify an existing telecommunications tower located at 57 Cook Drive, Montville, Connecticut.

Dear Ms. Carter:

At a public meeting held on September 1, 1998, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility in Montville, Connecticut, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated August 21, 1998. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has 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 of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/jlh

c: Honorable Patrick Dougherty, Mayor, Town of Montville

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# STATE OF CONNECTICUT

*CONNECTICUT SITING COUNCIL*

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


August 25, 1998

Honorable Patrick J. Dougherty
Mayor
Town of Montville, Town Hall
310 Norwich-New London Road
Uncasville, CT 06382

RE: EM-BAM-086-980821 - Bell Atlantic Mobile notice of intent to modify an existing telecommunications tower located at 57 Cook Drive, Montville, Connecticut.

Dear Mayor Dougherty:

On August 21, 1998, the Connecticut Siting Council (Council) received a request from Bell Atlantic Mobile to modify an existing telecommunications facility located at 57 Cook Drive in Montville, Connecticut, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for Tuesday, September 1, 1998, at 10:00 a.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

ROBINSON & COLE LLP
HARTFORD • STAMFORD • GREENWICH • NEW YORK • BOSTON

LAW OFFICES

One Commercial Plaza
280 Trumbull Street
Hartford, CT 06103-3597
860-275-8200
Fax 860-275-8299

Kenneth C. Baldwin
860-275-8345
Internet: kbaldwin@rc.com



September 8, 1998

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

Re: **TS-SCLP/BAM - 148-980716 - Wallingford Tower Share Proposal**
**EM-BAM-152-980821 - Exempt Modification for Waterford Tower Proposal**
**EM-BAM-086-980821 - Exempt Modification for Montville Tower Share Proposal**

Dear Mr. Rinebold:

I am writing on behalf of Cellco Partnership d/b/a Bell Atlantic Mobile ("BAM") with respect to the Siting Council's approval letters for the above-referenced proposals. As you know from the information submitted by BAM, the Wallingford tower is owned and operated by Sprint Spectrum LP; the proposed Waterford tower will be owned by the Cohanzie Fire Company; and the Montville tower is owned by Wireless Solutions, Inc. While we understand the Council's concern for future modifications to each of these towers, the specific notice requirements and information of enforcement responsibility, is information that should be presented to the tower owner. As stated in each proposal, BAM has no ownership interest in any of the towers and is therefore not subject to the same requirements of the tower owners under those sections of the Connecticut General Statutes and Regulations of Connecticut State Agencies referenced in your letter. This letter is written simply to clarify that point.

Thank you very much for your time and consideration.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
cc: Sandy M. Carter
David S. Malko, P.E.



**WIRELESS SOLUTIONS**
Ken Thomas
P.O. BOX 284
OLD LYME, CT. 06371
Phone (860) 434-6363 Pager (860) 260-4700

Bell Atlantic Mobile
20 Alexander Drive
Wallingford, CT 06492-7529
ATTN: Sandy Carter

RE: Structural Loading on Site # 2001 Tower Site Location #57 Cook Drive Montville CT.

Sandy this Tower was engineered by UNR ROHN Tower company file # 35489PH to accommodate (5) five carriers with a minim of (12) twelve Antenna per mounting frame. Bell Atlantic will be the third carrier on this tower and the antenna system that is being installed by your company is well within the specifications of the loading criteria for this Tower.

Sincerely your:

Ken Thomas 8-31-98

Ken Thomas

EM-BAM-086

Bell Atlantic Mobile

Bell Atlantic Mobile
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492
Telephone: 203-269-8858



August 21, 1998

HAND DELIVERED

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

Re: Bell Atlantic Mobile – Montville Cell Site

Dear Mr. Rinebold:

Cellco Partnership d/b/a Bell Atlantic Mobile, Inc. (the "Company") plans to install cellular antennas and related equipment at the tower facility in Montville owned by Mr. Ken Thomas of Old Lyme, Connecticut. Please accept this letter as notice of intent, pursuant to R.C.S.A. Section 16-50j-73, of the placement of associated equipment on an existing non-facility tower pursuant to R.C.S.A. Section 16-50j-72( c ). In further compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to the First Selectman of Montville.

The existing non-facility tower is a 180' guyed tower located at 57 Cook Drive, Montville, Connecticut. The Company plans to install twelve panel-type cellular antennas and one G.P.S. antenna on the tower. The Company will also install a single story, approximately 12' x 30' equipment building which will contain radio transmission equipment. In addition, Bell Atlantic Mobile will install a diesel generator for emergency use. The generator will be installed following receipt of the required DEP permit.

Smart SMR of New York, Inc. ("Nextel") is located on the tower at the 140' level and Springwich Cellular Limited Partnership ("SCLP") is located on the tower at the 177'.6" level (see attached letter to Council dated March 10, 1998).

The addition of Bell Atlantic Mobile'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 16-50j-72 ( c).

First, the height of the existing tower will be unaffected. Twelve antennas, Allgon Model ALP-9212 will be mounted, four per sector on a triangular platform to be attached to the tower. The center of radiation will be 168' AGL. The G.P.S. antenna will be mounted from the tower at approximately 168' AGL. The tower will not require any structural modification to support the proposed attachments (see attached tower design analysis).

Second, the proposed addition will not extend the site boundaries. The proposed equipment building will be located next to the tower and both the existing Nextel and Springwich Cellular Limited Partnership equipment buildings within the tower compound area on a parcel of land which will be leased to Bell Atlantic Mobile (see attached site plan). Bell Atlantic Mobile, Inc. will relocate the existing fence within the facility compound leased by Mr. Ken Thomas, but will not extend the total compound site boundary. The total compound site boundary consists of a 150' circumference around the base of the tower.

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 applicable ANSI standards. "Worst-case" exposure calculations for a point at the base of the tower in relation to operation of each of BAM's, SCLP's and Nextel's antenna arrays are as follows:

| | Applicable ANSI Stnd. | Calculated "Worst Case" | Percentage of Stnd. |
|---|---|---|---|
| BAM | 0.583 mW/cm2 | 0.0236 mW/cm2 | 4.05% |
| SCLP | 0.5867 mW/cm2 | 0.0217 mW/cm2 | 3.69% |
| Nextel | 0.5667 mW/cm2 | 0.0165 mW/cm2 | 2.91% |

The collective "worst-case" exposure would be only 10.65% of the ANSI standard, as calculated for mixed frequency sites. Power density levels from the shared use of the tower facility would thus be well below applicable ANSI standards.

Finally, the owner of the tower, Mr. Ken Thomas, has received the necessary municipal approvals and permits for the project (see attached building/zoning permits).

For the foregoing reasons, Bell Atlantic Mobile, Inc. seeks a ruling that its proposed additions to the non-facility tower would not cause a significant change or alteration in the physical and environmental characteristics of the site pursuant to R.C.S.A. Section 16-50j-72 ( c )(1). The Company further submits that the changes comply with R.C.S.A. Sections 16-50j-72 ( c ), (2) through (5) and therefore request 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 16-50j-72 ( c ).

Very truly yours,

Sandy M. Carter

Sandy M. Carter
Manager-Regulatory
Bell Atlantic Mobile, Inc.

Attachments

Copy to: Patrick Dougherty, Mayor of Montville

Bell Atlantic Mobile
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492
Telephone: 203-269-8858

Bell Atlantic Mobile

August 21, 1998

Honorable Patrick J. Dougherty, Mayor
Town Hall
310 Norwich-New London Road
Uncasville, Connecticut 06382

Dear Mayor Dougherty:

This letter is to inform you that Cellco Partnership d/b/a Bell Atlantic Mobile, Inc. (the "Company") plans to install antennas and associated equipment at the existing tower facility owned by Mr. Ken Thomas and located on 57 Cook Drive, Montville, Connecticut. As required by Section 16-50j-73 of the Regulations of the Connecticut State Agencies (R.C.S.A.), please accept this letter and the attached letter to the Connecticut Siting Council as notice on intent of the placement of the associated equipment on an existing non-facility tower pursuant to R.C.S.A. Section 16-50j-72 ( c ).

The attached letter fully sets forth the Company's proposal. However, if you have any questions or require any further information on the plans for this site or the Siting Council's procedures, please contact the undersigned at (203) 294-8519 or Mr. Joel Rinebold, Executive Director of the Connecticut Siting Council, at (860) 827-2935.

Sincerely,

Sandy M. Carter

Sandy M. Carter
Manager – Regulatory

Enclosure

ATTACHMENT ONE

Springwich Cellular Limited Partnership

300 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7755
Fax: (860) 513-7614

Peter J. Tyrrell
*General Counsel*



March 10, 1998

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

**RE: Springwich Cellular Limited Partnership—Uncasville (Montville) Cellular Communication Site**

Dear Chairman Gelston:

Springwich Cellular Limited Partnership ("SCLP") plans to install cellular antennas and a related equipment at the tower facility in Uncasville, owned by Mr. Ken Thomas in Old Lyme, Connecticut. Please accept this letter as a notice of intent, pursuant to R.C.S.A. Section 16-50j-73, of the placement of associated equipment on an existing non-facility tower pursuant to R.C.S.A. Section 16-50j-72(c). In further compliance with R.C.S.A. Section 16-58j-73, a copy of this letter is being sent to the Mayor.

The existing non-facility tower is a 180' guyed tower located at 57 Cook Drive, Uncasville, (Montville), Connecticut. SCLP plans to install nine panel-type cellular antennas on the tower. SCLP will also install a single story, approximately 12' x 26' equipment building which will contain radio transmission equipment.

Smart SMR of New York, Inc. ("Nextel") is already located on the tower at the 140' level.

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 16-50j-72(c).

First, the height of the existing tower will be unaffected. Nine antennas, ALP Model 11011N will be mounted, three per sector on a triangular platform to be attached to the tower. The center of radiation will be 177',6" AGL and the top of the antenna will be 180' high. The tower will not require any structural modification to support the proposed attachments (see attached tower elevation plan).

Second, the proposed addition will not extend the site boundaries. The proposed equipment building will be next to the tower on a parcel of land 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.

| SERVICE/CARRIER | FREQUENIECIES (Mhz) | POWER DENSITY (mW/cm2) | HEIGHT | STANDARD LIMITS (mW/cm2) | % OF STANDARD |
|---|---|---|---|---|---|
| NEXTEL | 850 | 0.0165 | 140 | 0.5667 | 2.91% |
| SCLP | 880 | 0.0217 | 177.6 | 0.5867 | 3.69% |
| TOTAL | | N/A | N/A | N/A | 6.60% |

As the table demonstrated, SCLP's proposed antennas would contribute 3.69% of the ANSI standard for the cellular frequency range, bringing the site total to 6.60% of the standard as calculated for a mixed frequency site.

Finally, the owner of the tower, Mr. Ken Thomas, has received the necessary municipal approvals and permits for the project (see attached building/zoning permits attached.)

For the foregoing reasons, SCLP seeks a ruling that its proposed additions to the non-facility tower would not cause a significant change or alteration in the physical and environmental characteristics of the site pursuant to R.C.S.A. Section 16-50j-72(c) (1). SCLP further submits that the changes comply with R.C.S.A. Sections 16-50j-72(c) (2) through (5) and therefore request 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 16-50j-72(c).

Thank you for your cooperation.

Sincerely,

Peter J. Tyrrell

Attachments

copy to: Patrick Dougherty, Mayor of Uncasville
Ken Thomas, Wireless Solution, LLC

ATTACHMENT THREE

UNR-ROHN
Division of UNR Industries, Inc.
6718 W. Plank Road, P.O. Box 2000, Peoria, Illinois 61656 USA Phone: (309) 697-4400 FAX: (309) 697-5612

PURCHASER: WIRELESS SOLUTIONS

NAME OF PROJECT: #59 Cook Dr. MONTVILLE CT, NEW LONDON COUNTY, CT
180 FT. MODEL 80 TOWER

UNR-ROHN FILE NUMBER: 35489PH

UNR-ROHN DRAWING NUMBERS: B971656

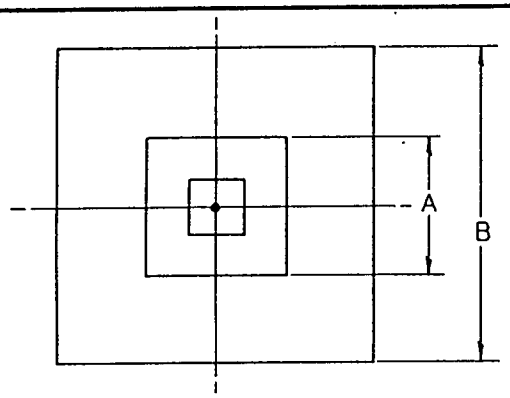
I CERTIFY THAT THE DESIGN OF THE REFERENCED TOWER WAS PREPARED UNDER MY SUPERVISION IN ACCORDANCE WITH THE LOADING AND SOIL CRITERIA SPECIFIED BY THE PURCHASER AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

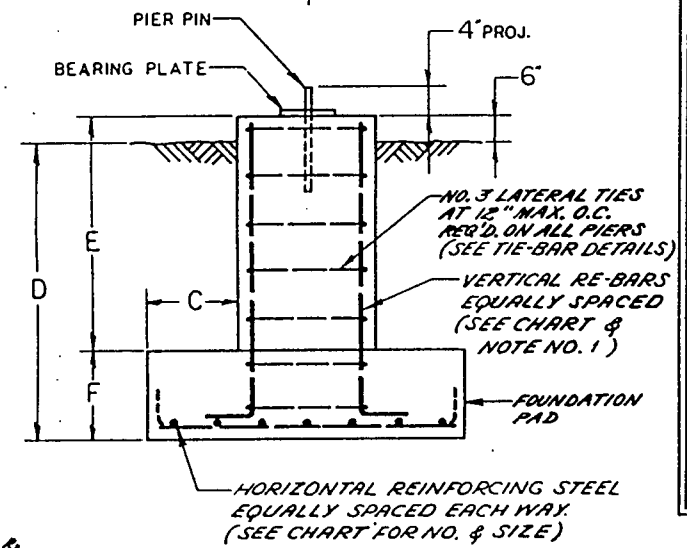
THE REFERENCED FOUNDATIONS ARE STANDARD FOUNDATIONS DESIGNED IN ACCORDANCE WITH ANSI/EIA-222-E NORMAL SOIL PARAMETERS. STANDARD FOUNDATIONS SHOULD NOT BE RELIED UPON FOR THE REFERENCED SITE WITHOUT COMPETENT PROFESSIONAL EXAMINATION AND VERIFICATION OF THEIR SUITABILITY BASED ON THE SUBSURFACE CONDITIONS EXISTING AT THE SITE.

CERTIFIED BY: _____

DATE: 3-20-97

STATE OF CONNECTICUT
THOMAS W. SCHEPKE
No. 14897
LICENSED
PROFESSIONAL ENGINEER

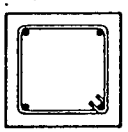


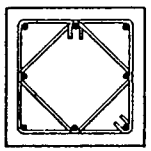

## CONCRETE BASE SCHEDULE

| CB NO. | TOWER BASE REACTION | DIMENSIONS A | B | C | D | E | F | BEARING PLATE | CONC. (CU. YDS) | VERTICAL BARS (NO. & SIZE) | HORIZ. BARS (NO. & SIZE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14000 | 2'-0 | 2'-0 | 0 | 4'-0 | 0 | 0 | BP 6 | .70 | 4-NO.6 | NONE* |
| 2 | 22000 | 2'-6 | 2'-6 | 0 | 4'-0 | 0 | 0 | BP 6 | 1.00 | 4-NO.6 | NONE* |
| 3 | 32000 | 3'-0 | 3'-0 | 0 | 4'-0 | 0 | 0 | BP 6 | 1.50 | 4-NO.6 | NONE* |
| 4 | 44000 | 3'-6 | 3'-6 | 0 | 4'-0 | 0 | 0 | BP 6 | 2.10 | 4-NO.6 | NONE* |
| 5 | 58000 | 2'-0 | 4'-0 | 1'-0" | 4'-0 | 3'-3 | 1'-3 | BP 6 | 1.22 | 4-NO.6 | 6-NO.4 |
| 6 | 74000 | 2'-0 | 4'-6 | 1'-3" | 4'-0 | 3'-3 | 1'-3 | BP 6 | 1.42 | 4-NO.6 | 6-NO.5 |
| 7 | 90000 | 2'-0 | 5'-0 | 1'-6 | 4'-6 | 3'-9 | 1'-3 | BP 10 | 1.70 | 8-NO.6 | 6-NO.5 |
| 8 | 109000 | 2'-0 | 5'-6 | 1'-9 | 4'-6 | 3'-9 | 1'-3 | BP 10 | 2.00 | 8-NO.6 | 6-NO.5 |
| 9 | 130000 | 2'-0 | 6'-0 | 2'-0 | 4'-6 | 3'-6 | 1'-6 | BP 10 | 2.50 | 8-NO.6 | 7-NO.5 |
| 10 | 150000 | 2'-0 | 6'-6 | 2'-3 | 4'-6 | 3'-6 | 1'-6 | BP 10 | 2.90 | 8-NO.6 | 8-NO.5 |
| 11 | 173000 | 2'-6 | 7'-0 | 2'-3 | 5'-0 | 3'-9 | 1'-9 | BP 15 | 4.00 | 8-NO.7 | 8-NO.6 |
| 12 | 198000 | 2'-6 | 7'-6 | 2'-6 | 5'-0 | 3'-9 | 1'-9 | BP 15 | 4.50 | 8-NO.7 | 8-NO.6 |
| 13 | 224000 | 2'-6 | 8'-0 | 2'-9 | 5'-0 | 3'-9 | 1'-9 | BP 15 | 5.00 | 8-NO.7 | 9-NO.6 |
| 14 | 251000 | 3'-0 | 8'-6 | 2'-9 | 5'-0 | 3'-6 | 2'-0 | BP 15 | 6.50 | 12-NO.7 | 9-NO.7 |
| 15 | 279000 | 3'-0 | 9'-0 | 3'-0 | 5'-0 | 3'-6 | 2'-0 | BP 15 | 7.20 | 12-NO.7 | 10-NO.7 |

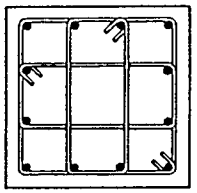
R3 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.



CB1 THRU CB6



CB7 THRU CB13



CB14 & CB 15

TIE BAR DETAILS

## GENERAL NOTES:

FOR REQUIRED MATERIAL SPECIFICATION, INSTALLATION NOTES AND TOLERANCES SEE DRAWING NUMBER B841300.

1. VERTICAL REINFORCING STEEL MAY BE PLACED WITH AN OPTIONAL STANDARD ACI 90° BEND AT BOTTOM.
2. BEARING PLATE PROVIDED ONLY ON TOWERS WITH TAPERED BASE.
*3. HORIZ. BARS IN CHART REFER ONLY TO THE BARS IN THE FOUNDATION PAD.

| NO. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| R2 | ADDED NOTE | 7-6-76 | DH |
| R1 | RE-DRAWN-SUPERSEDES C-610621D | 2-26-75 | DH |
| R6 | REV GEN. NOTES ADDED B841300 NOTE. | 1-9-85 | RKB |
| R5 | ADDED GENERAL NOTE #3 | 1-21-80 | JHD |
| R4 | REMOVED RS-222-B FROM GEN. NOTE NO. 7. | 3/7/77 | GLS |
| R3 | DELETE SIZE PIER PIN. | 7/29/76 | GLS |

REVISIONS

ROHN® MANUFACTURING
DIVISION OF HEADY

TITLE: CONCRETE BASE SCHEDULE



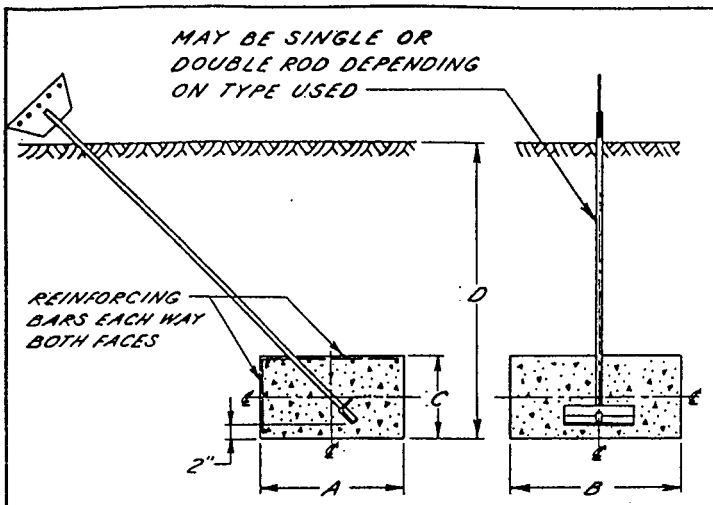
FILE NO.

SCALE ~ | MATERIAL | FINISH | WT

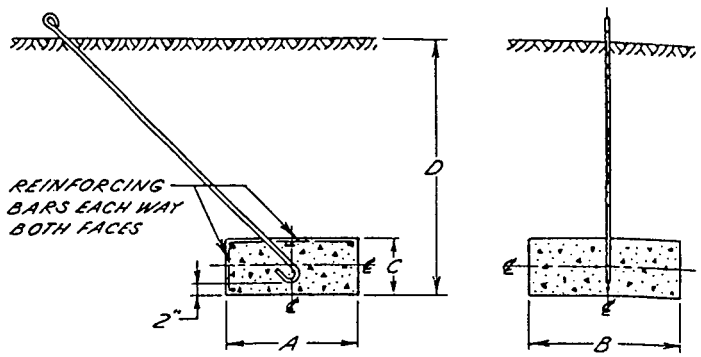
DWN. BY D.H. DATE 2-26-75
CHK'D. BY WDU DATE 3-7-75
APP'D. ENGR'G. DW DATE 3-7-75
APP'D. BY BR DATE 3-15-75

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES. TOLERANCES: DEC. ± .1, FRAC. ± 1/8, ANGLES ± 1°

DWG. NO. C 610621 R6




ANCHOR DETAIL FOR GAC 34, 56, 57, & 58
SHOWN ON DWG. NO. C 660415




ANCHOR DETAIL FOR GAC 30

R9 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

General Notes

FOR REQUIRED MATERIAL SPECIFICATIONS, INSTALLATION NOTES AND TOLERANCES SEE DRAWING NUMBER B841300.

1. MINIMUM ½" DIAMETER REINFORCING BARS IN ALL ANCHORS WITH MAXIMUM SPACING OF 12" EXCEPT NO. 10 BLOCK MAXIMUM SPACING OF 6".

## CONCRETE ANCHOR DATA

| DEPTH, D (FT.) | ROD NO. | BLOCK NO. | ANCHOR DIMENSIONS (FT.) A | B | C | WEIGHT CONCRETE (LBS) | CONCRETE (CU. YDS.) | UPLIFT * CAPACITY (LBS.) | LATERAL CAPACITY (LBS.) |
|---|---|---|---|---|---|---|---|---|---|
| 3 | GAC 30 | 3a | 1.5 | 1.5 | 1 | 310 | .08 | 900 | 1,500 |
| | | 3b | 2 | 2 | 1 | 560 | .15 | 1,320 | 2,000 |
| | | 3c | 2.5 | 2.5 | 1 | 870 | .23 | 1,810 | 2,500 |
| | | 3d | 3 | 3 | 1 | 1,260 | .33 | 2,535 | 3,000 |
| | | 3e | 3 | 4 | 1 | 1,680 | .44 | 3,020 | 4,000 |
| 4 | GAC 30 OR GAC 34 | 4a | 3 | 3 | 1.5 | 1,890 | .50 | 3,490 | 5,850 |
| | | 4b | 3 | 4 | 1.5 | 2,520 | .67 | 4,360 | 7,800 |
| | | 4c | 3 | 5 | 1.5 | 3,150 | .84 | 4,985 | 9,750 |
| | | 4d | 3 | 6 | 1.5 | 3,780 | 1.00 | 6,090 | 11,700 |
| | | 4e | 4 | 6 | 1.5 | 5,050 | 1.33 | 7,660 | 11,700 |
| 6 | GAC 56 | 6a | 3 | 4 | 1.5 | 2,520 | .67 | 10,035 | 12,600 |
| | | 6b | 3 | 5 | 1.5 | 3,150 | .84 | 11,600 | 15,750 |
| | | 6c | 3 | 6 | 1.5 | 3,780 | 1.00 | 13,150 | 18,900 |
| | | 6d | 4 | 6 | 1.5 | 5,050 | 1.33 | 15,850 | 18,900 |
| 8 | GAC 57 | 8a | 3 | 5 | 1.5 | 3,150 | .84 | 22,150 | 21,750 |
| | | 8b | 3 | 6 | 1.5 | 3,780 | 1.00 | 24,700 | 26,100 |
| | | 8c | 4 | 6 | 1.5 | 5,050 | 1.33 | 28,500 | 26,100 |
| | | 8d | 6 | 6 | 2.0 | 10,800 | 2.67 | 33,380 | 33,600 |
| 10 | GAC 58 | 10a | 3 | 6 | 2.0 | 5,040 | 1.33 | 37,450 | 43,200 |
| | | 10b | 4 | 6 | 2.0 | 6,720 | 1.78 | 42,700 | 43,200 |
| | | 10c | 4 | 7 | 2.0 | 7,840 | 2.07 | 46,800 | 50,400 |
| | | 10d | 5 | 7 | 2.0 | 9,800 | 2.59 | 52,350 | 50,400 |
| | | 10e | 5 | 9 | 2.0 | 12,600 | 3.33 | 61,700 | 64,800 |

* INCLUDES SAFETY FACTOR OF 2

* * NORMAL SOIL IS A COHESIVE TYPE SOIL WITH A HORIZONTAL BEARING CAPACITY OF 400 POUNDS PER SQUARE FOOT PER LINEAL FOOT OF DEPTH. ROCK, NON-COHESIVE SOILS, OR SATURATED OR SUBMERGED SOILS ARE NOT TO BE CONSIDERED AS NORMAL.

| NO. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| R11 | REVISED ANCHOR DETAIL DWG. NO. | 8-18-77 | RLH |
| R10 | REMOVED RS-222-A FROM GEN. NOR NO. 1 | 3/7/77 | GLS |
| R9 | ADDED NOTE | 7-6-76 | OH |
| R8 | REVISE DESIGN NOTE 1. | 1-14-75 | WELL |
| R7 | REVISE DESIGN NOTE 1. & TITLE BLOCK | 11-21-74 | WELL |
| R6 | GAC-25 WAS GA-25 | 12-7-73 | JER |
| R5 | REVISED FOR EIA RS-222-B | 9/6/73 | GLS |
| R4 | INCREASED ROD LENGTHS; PART NO. GAC30 WAS GAC25 | 6-30-88 | 15 USA |

ROHN MANUFACTURING
DIVISION OF GENERAL ELECTRIC

TITLE: STANDARD CONCRETE ANCHOR

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FILE NO.

SCALE: NONE | DRAWN BY: GLS | DATE: 4/4/73 | CHECKED: [illegible] | DATE: 4-4-73 | APPROVED: [illegible] | DATE: 4-4-73

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES. TOLERANCES: DEC. ± FRAC. ± ANGLES ±

DWG. NO. C 620643

# STANDARD FOUNDATION NOTES

1. FOUNDATION DESIGNS ARE IN ACCORDANCE WITH ANSI/EIA-222-E, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES", SECTION 7, FOR "NORMAL" SOIL CONDITIONS. "NORMAL" SOIL IS DEFINED AS DRY, COHESIVE SOIL WITH AN ALLOWABLE NET VERTICAL BEARING CAPACITY OF 4000 PSF (192 kPa) AND AN ALLOWABLE NET HORIZONTAL PRESSURE OF 400 PSF PER LINEAL FOOT OF DEPTH (62.8 kPa PER LINEAL METER OF DEPTH) TO A MAXIMUM OF 4000 PSF (192 kPa).
2. THE PURCHASER MUST VERIFY THAT ACTUAL SITE SOIL PARAMETERS MEET OR EXCEED E.I.A. "NORMAL" SOIL PARAMETERS AND THAT THE DEPTH OF STANDARD FOUNDATIONS ARE ADEQUATE BASED ON THE FROST PENETRATION AND/OR ZONE OF SEASONAL MOISTURE VARIATION AT THE SITE. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT "NORMAL" SOIL PARAMETERS ARE NOT APPLICABLE FOR THE ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED.
3. FOUNDATION DESIGNS ASSUME FIELD INSPECTIONS WILL BE PERFORMED BY THE PURCHASER'S REPRESENTATIVE TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS EXISTING AT THE SITE.
4. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
5. ANCHOR BOLTS SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM A354 GRADE BC AND SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION (FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH).
6. PAL NUTS OR ANCO NUTS SHALL BE INSTALLED ON ALL ANCHOR BOLTS.
7. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
8. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI (20.7 MPa) IN 28 DAYS.
9. MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR 1/3 CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. MAXIMUM SIZE MAY BE INCREASED TO 2/3 CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS OR VOIDS.
10. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE INDICATED.
11. REINFORCING CAGES SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING AND THROUGHOUT PLACEMENT OF CONCRETE.
12. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
13. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES (76 mm) UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH (76 mm) MINIMUM COVER ON REINFORCEMENT.
14. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES (76 mm) NOR BE LESS THAN 2 INCHES (51 mm).
15. SPACERS SHALL BE ATTACHED INTERMITTENTLY THROUGHOUT THE ENTIRE LENGTH OF VERTICAL REINFORCING CAGES TO INSURE CONCENTRIC PLACEMENT OF CAGES IN EXCAVATIONS.
16. FOUNDATION DESIGNS ASSUME STRUCTURAL BACKFILL TO BE COMPACTED IN 8 INCH (200 mm) MAXIMUM LAYERS TO 95% OF MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 POUNDS PER CUBIC FOOT (16 kN/m3).
17. FOUNDATION DESIGNS ASSUME LEVEL GRADE AT TOWER SITE.
18. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED INSTALLATION PRACTICES.
19. FOR FOUNDATION AND ANCHOR TOLERANCES SEE DRAWING A810214.
20. LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. SIDES OF EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE CUTTINGS.
21. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS AND OTHER OCCURRENCES WHICH MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
22. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING SIDES OF EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
23. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL EXCEPT FOR PIERS OF PIER AND PAD FOUNDATIONS. FORMS FOR PIERS SHALL BE REMOVED PRIOR TO PLACING STRUCTURAL BACKFILL.
24. CONSTRUCTION JOINTS, IF REQUIRED IN PIER MUST BE AT LEAST 12 INCHES (305MM) BELOW BOTTOM OF EMBEDMENTS AND MUST BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF 1/4 INCH (6MM). FOUNDATION DESIGN ASSUMES NO OTHER CONSTRUCTION JOINTS.
25. TOP OF FOUNDATION OUTSIDE LIMITS OF ANCHOR BOLTS SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH. AREA INSIDE LIMITS OF ANCHOR BOLTS SHALL BE LEVEL WITH A SCRATCHED FINISH.
26. EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" (19 mm X 19 mm) MINIMUM.
27. FOR ANCHOR BLOCK TYPE FOUNDATIONS, THE PORTION OF ALL STEEL ANCHORS, FROM TOP OF ANCHOR BLOCK TO GROUND LEVEL, SHALL BE COATED WITH BITUMEN. DESIGN ASSUMES PERIODIC INSPECTIONS WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE TO DETERMINE IF ADDITIONAL ANCHOR CORROSION PROTECTION MEASURES MUST BE IMPLEMENTED BASED ON OBSERVED SITE-SPECIFIC CONDITIONS

| No. ▲ Revision Description | | ▲ Date | ▲ Rev By | ▲ Ckd By | ▲ Appd By |
|---|---|---|---|---|---|
| R10 | REVISED NOTE #9 & #24 | 11/3/94 | CSR | KTL | XK |
| R9 | REV'D NOTES 27 & 9 | 1-18-94 | RKB | WDU | XK |



ROHN

| | By | Date |
|---|---|---|
| Scale: NONE | | |
| Drawn: | CSR | 6/17/87 |
| Checked: | HA | 1/6/88 |
| App. Eng.: | XK | 1/6/88 |
| App. Sales: | AE | 2/2/88 |

Title: FOUNDATION MATERIAL SPECIFICATIONS, INSTALLATION NOTES AND TOLERANCES

DRAWING NO.: B841300R10

RUN BY: GEN DATE: 3/18/97 CHK'D BY: Ram DATE: 3/18/97

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

**********JOB DESCRIPTION DATA FOR CHECK ANALYSIS**********

DESIGN WIND LOAD PER ANSI/EIA-222-E-1991
90 MPH BASIC WIND SPEED (0.5" RADIAL ICE LOAD)
SITE: NORTH STONINGTON CT.
THE INPUT FOR THIS RUN IS LOCATED IN GENINPUT.GEN-18MAR97/104346

**********GENERAL DATA**********

TOWER HEIGHT.. = 180.0 FT.
BASE CONDITION = PINNED.
BASE ELEVATION = .0 FT.

FACE WIDTH..... = 3.42 FT.
TOTAL NUMBER OF ANCHORS = 1.

TOTAL NUMBER OF GUY LEVELS.....= 2
MINIMUM FACTOR OF SAFETY ON GUYS = 2.0
MODULUS OF ELASTICITY OF STRUCTURE = 29000 KSI.

****UNIFORM LOAD(FULL STRUCTURE HEIGHT)****

PA-ROUNDS, SF/FT. = .031
PA-FLATS, SF/FT. = .000
FACE..... = S
WEIGHT, K/FT. = .001

**********BUILDING CODE DATA**********

CODE USED = EIA-222-E-1991
IMPORTANCE FACTOR = 1.00
REDUCTION FACTOR (Rr) = REVE
SHAPE FACTOR ON ROUNDS = 1.20

BASIC WIND SPEED.....= 90 MPH
FORCE COEFFICIENT(Cf)..= REVE
REDUCTION FACTOR (Rf)..= 1.00

EXPOSURE.....(REVE).= C
GUST RESPONSE FACTOR(Gh).= 1.12
EXPOSURE COEFFICIENT(Kz) = (H/ 33.00)** .29
SHAPE FACTOR ON FLATS = 2.00

| | WIND NORMAL TO FACE | WIND INTO APEX | WIND PARALLEL TO FACE |
|---|---|---|---|
| DIRECTION FACTOR-ROUNDS: | 1.00 | 1.00 | 1.00 |
| DIRECTION FACTOR-FLATS : | 1.00 | .80 | .85 |

INCREASE IN STRUCTURAL MEMBER CAPACITY = 1.33

RADIAL ICE = .00

DESIGN ASSUMES :

ALL VHF ANTENNAS ARE MOUNTED SYMMETRICALLY TO MINIMIZE TORQUE.

ALL TRANSMISSION LINES AND WAVEGUIDE LADDERS ARE EQUALLY DISTRIBUTED ON 3 MAST FACES.

NOTE : UNR-ROHN SHALL HAVE THE OPTION TO REVIEW FINAL DISH LOCATIONS, AZIMUTHS, AND MOUNTS TO VERIFY THAT THE ASSUMED TORQUE VALUES AND LOCAL STRESSES ARE NOT EXCEEDED.

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

**********SECTION DATA**********

| SPAN NO. | SECTION | AREA OF ROUNDS (SF/FT) | AREA OF FLATS (SF/FT) | AREA GROSS (SF/FT) | WEIGHT (K/FT) |
|---|---|---|---|---|---|
| 1 | 85H | .699 | .135 | 3.709 | .050 |
| 2 | 84HX | .789 | .135 | 3.657 | .046 |
| CANTILEVER | 84HXE | .479 | .733 | 3.657 | .081 |

**********SPAN DATA**********

| SPAN NO. | SPAN LENGTH | WINDLOAD PER FOOT (KIPS) | WEIGHT PER FOOT (KIPS) | HEIGHT OF TYP.PANEL (FT) | LEG AREA (IN**2) | DIAGONAL AREA (IN**2) | ANGLE WITH HORZ (DEGREES) | BRACING TYPE | STRUT AREA (IN**2) | MOMENT OF INERTIA (IN**2FT**2) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 102.0 | .1460 | .121 | 2.409 | 3.016 | .293 | 40.377 | SINGLE | .000 | 17.61 |
| 2 | 60.0 | .1790 | .099 | 2.409 | 2.254 | .293 | 40.377 | X | .000 | 13.16 |
| CANTILEVER | 18.0 | .1230 | .099 | 2.409 | 2.254 | .938 | 40.377 | X | .000 | 13.16 |

**********LOAD DATA**********

| ELEVATION (FT) | EFFECTIVE PROJECTED AREA (SF) | HORIZONTAL LOAD (KIPS) | WEIGHT (KIPS) | LINES: UNIFORM WEIGHT (K/FT) | LINES: FACE | PROJECTED AREA ROUNDS (SF/FT) | PROJECTED AREA FLATS (SF/FT) | M.A.*E.P.A. (SF-FT) | TORQUE (FT-K) |
|---|---|---|---|---|---|---|---|---|---|
| 179.00 | 120.000 | 4.521 | 3.000 | .017 | 1 | .840 | .000 | 140.00 | 5.275 |
| 179.00 | .000 | .000 | .000 | .000 | 2 | .840 | .000 | .00 | .000 |
| 179.00 | .000 | .000 | .000 | .000 | 3 | 1.008 | .000 | .00 | .000 |
| 170.00 | 75.000 | 2.785 | 1.200 | .002 | 1 | .168 | .000 | 90.00 | 3.341 |
| 170.00 | .000 | .000 | .000 | .000 | 2 | .168 | .000 | .00 | .000 |
| 163.00 | 20.000 | .734 | 1.000 | .000 | 0 | .000 | .000 | .00 | .000 |
| 160.00 | 120.000 | 4.379 | 3.000 | .017 | 1 | .840 | .000 | 140.00 | 5.109 |
| 160.00 | .000 | .000 | .000 | .000 | 2 | .840 | .000 | .00 | .000 |
| 160.00 | .000 | .000 | .000 | .000 | 3 | 1.008 | .000 | .00 | .000 |
| 140.00 | 120.000 | 4.215 | 3.000 | .017 | 1 | .336 | .000 | 140.00 | 4.917 |
| 140.00 | .000 | .000 | .000 | .000 | 2 | .168 | .000 | .00 | .000 |
| 140.00 | .000 | .000 | .000 | .000 | 3 | .168 | .000 | .00 | .000 |
| 120.00 | 120.000 | 4.033 | 3.000 | .017 | 1 | .168 | .000 | 140.00 | 4.705 |
| 120.00 | .000 | .000 | .000 | .000 | 2 | .168 | .000 | .00 | .000 |
| 120.00 | .000 | .000 | .000 | .000 | 3 | .168 | .000 | .00 | .000 |
| 110.00 | 15.000 | .492 | .800 | .000 | | .000 | .000 | .00 | .000 |
| 102.00 | 23.000 | .738 | 1.000 | .000 | | .000 | .000 | .00 | .000 |

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

**********JOB DESCRIPTION DATA FOR CHECK ANALYSIS**********

DESIGN WIND LOAD PER ANSI/EIA-222-E-1991
90 MPH BASIC WIND SPEED (0.5" RADIAL ICE LOAD)
SITE: NORTH STONINGTON CT.
THE INPUT FOR THIS RUN IS LOCATED IN GENINPUT.GEN-18MAR97/104346

**********GENERAL DATA**********

TOWER HEIGHT.. = 180.0 FT.
BASE CONDITION = PINNED.
BASE ELEVATION = .0 FT.

FACE WIDTH..... = 3.42 FT.
TOTAL NUMBER OF ANCHORS = 1.

TOTAL NUMBER OF GUY LEVELS.....= 2
MINIMUM FACTOR OF SAFETY ON GUYS = 2.0
MODULUS OF ELASTICITY OF STRUCTURE = 29000 KSI.

****UNIFORM LOAD(FULL STRUCTURE HEIGHT)****

PA-ROUNDS, SF/FT. = .115
PA-FLATS, SF/FT. = .000
WEIGHT, K/FT. = .001
FACE..... = S

**********BUILDING CODE DATA**********

CODE USED = EIA-222-E-1991
IMPORTANCE FACTOR = 1.00
REDUCTION FACTOR (Rr) = REVE
SHAPE FACTOR ON ROUNDS = 1.20

BASIC WIND SPEED.....= 90 MPH
FORCE COEFFICIENT(Cf)..= REVE
REDUCTION FACTOR (Rf)..= 1.00

EXPOSURE.....(REVE).= C
GUST RESPONSE FACTOR(Gh).= 1.12
EXPOSURE COEFFICIENT(Kz) = (H/ 33.00)** .29
SHAPE FACTOR ON FLATS = 2.00

| | WIND NORMAL TO FACE | WIND INTO APEX | WIND PARALLEL TO FACE |
|---|---|---|---|
| DIRECTION FACTOR-ROUNDS: | 1.00 | 1.00 | 1.00 |
| DIRECTION FACTOR-FLATS : | 1.00 | .80 | .85 |

INCREASE IN STRUCTURAL MEMBER CAPACITY = 1.33

RADIAL ICE = .50

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180 FT #80 GUYED TOWER ANALYSIS                                                 1
WIRELESS SOLUTIONS.      ENG. FILE NO. = 35489PH      ENG = GEN                 2
DESIGN WIND LOAD PER ANSI/EIA-222-E-1991                                        3
90 MPH BASIC WIND SPEED (0.5" RADIAL ICE LOAD)                                  4
SITE: NORTH STONINGTON CT.                                                      5
THE INPUT FOR THIS RUN IS LOCATED IN GENINPUT.GEN-18MAR97/104346                6
END                                                                             7
01 2 1 0 1 1 0 0       .000   180.000     3.417      .000      .000      .000    8
02 0 0 0 0 0 0 0     140.000                                                    9
03 1 1 2 6 8 0 0     102.000     6.834     4.240                                10
03 2 1 2 6 9 0 0     162.000     6.834     5.830                                11
05 1 1 4 0 0 0 0       3.016     2.409      .293      .000      .222    40.377   12
05 2 2 2 0 0 0 0       2.254     2.409      .293      .000      .186    40.377   13
05 3 3 2 0 0 0 0       2.254     2.409      .938      .000      .147    40.377   14
- LOAD CASE 2 -  75% OF WIND LOAD &  .50" OF ICE --- SAME LOAD ALL 3 DIRECTIONS 15
06 1 1 1 1 1 1 3       .500    60.000    30.000      .000      .000      .000    16
07 1 0 0 0 0 0 0     87.813      .000      .000      .000      .000      .000    17
07 2 0 0 0 0 0 0     93.812      .000      .000      .000      .000      .000    18
08 1 0 0 0 0 0 0       .150      .000      .000      .000      .000      .000    19
08 2 0 0 0 0 0 0       .189      .000      .000      .000      .000      .000    20
08 3 0 0 0 0 0 0       .144      .000      .000      .000      .000      .000    21
09 1 0 0 0 0 0 0       .602      .000      .000     1.400      .000      .000    22
10 2 0 0 0 0 0 0       .443      .000      .000     1.200   110.000      .000    23
10 2 0 0 0 0 0 0      4.537      .000     5.294     4.400   120.000      .000    24
10 2 0 0 0 0 0 0      4.742      .000     5.532     4.400   140.000      .000    25
10 2 0 0 0 0 0 0      4.926      .000     5.747     4.400   160.000      .000    26
10 3 0 0 0 0 0 0       .633      .000      .000     1.400   163.000      .000    27
10 3 0 0 0 0 0 0      2.088      .000     2.506     1.400   170.000      .000    28
10 3 0 0 0 0 0 0      5.087      .000     5.934     4.400   179.000      .000    29
11 0 0 0 0 0 0 0       .000      .000      .000      .000      .000      .000    30
END                                                                             31
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JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

**********SECTION DATA**********

| SPAN NO. | SECTION | AREA OF ROUNDS (SF/FT) | AREA OF FLATS (SF/FT) | AREA GROSS (SF/FT) | WEIGHT (K/FT) |
|---|---|---|---|---|---|
| 1 | 85H | 1.020 | .135 | 3.792 | .067 |
| 2 | 84HX | 1.240 | .135 | 3.740 | .068 |
| CANTILEVER | 84HXE | .912 | .733 | 3.740 | .106 |

**********SPAN DATA**********

| SPAN NO. | SPAN LENGTH | WINDLOAD PER FOOT (KIPS) | WEIGHT PER FOOT (KIPS) | HEIGHT OF TYP.PANEL (FT) | LEG AREA (IN**2) | DIAGONAL AREA (IN**2) | ANGLE WITH HORZ (DEGREES) | BRACING TYPE | STRUT AREA (IN**2) | MOMENT OF INERTIA (IN**2FT**2) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 102.0 | .1500 | .222 | 2.409 | 3.016 | .293 | 40.377 | SINGLE | .000 | 17.61 |
| 2 | 60.0 | .1890 | .186 | 2.409 | 2.254 | .293 | 40.377 | X | .000 | 13.16 |
| CANTILEVER | 18.0 | .1440 | .147 | 2.409 | 2.254 | .938 | 40.377 | X | .000 | 13.16 |

**********LOAD DATA**********

| ELEVATION (FT) | EFFECTIVE PROJECTED AREA (SF) | HORIZONTAL LOAD (KIPS) | WEIGHT (KIPS) | <-- LINES --> UNIFORM WEIGHT (K/FT) | FACE | PROJECTED AREA ROUNDS (SF/FT) | PROJECTED AREA FLATS (SF/FT) | M.A.*E.P.A. (SF-FT) | TORQUE (FT-K) |
|---|---|---|---|---|---|---|---|---|---|
| 179.00 | 180.000 | 5.087 | 4.400 | .040 | 1 | 1.260 | .000 | 210.00 | 5.934 |
| 179.00 | .000 | .000 | .000 | .000 | 2 | 1.260 | .000 | .00 | .000 |
| 179.00 | .000 | .000 | .000 | .000 | 3 | 1.512 | .000 | .00 | .000 |
| 170.00 | 75.000 | 2.088 | 1.400 | .004 | 1 | .252 | .000 | 90.00 | 2.506 |
| 170.00 | .000 | .000 | .000 | .000 | 2 | .252 | .000 | .00 | .000 |
| 163.00 | 23.000 | .633 | 1.400 | .000 | 0 | .000 | .000 | .00 | .000 |
| 160.00 | 180.000 | 4.926 | 4.400 | .040 | 1 | 1.260 | .000 | 210.00 | 5.747 |
| 160.00 | .000 | .000 | .000 | .000 | 2 | 1.260 | .000 | .00 | .000 |
| 160.00 | .000 | .000 | .000 | .000 | 3 | 1.512 | .000 | .00 | .000 |
| 140.00 | 180.000 | 4.742 | 4.400 | .040 | 1 | .504 | .000 | 210.00 | 5.532 |
| 140.00 | .000 | .000 | .000 | .000 | 2 | .256 | .000 | .00 | .000 |
| 140.00 | .000 | .000 | .000 | .000 | 3 | .252 | .000 | .00 | .000 |
| 120.00 | 180.000 | 4.537 | 4.400 | .030 | 1 | .252 | .000 | 210.00 | 5.294 |
| 120.00 | .000 | .000 | .000 | .000 | 2 | .252 | .000 | .00 | .000 |
| 120.00 | .000 | .000 | .000 | .000 | 3 | .252 | .000 | .00 | .000 |
| 110.00 | 18.000 | .443 | 1.200 | .000 | | .000 | .000 | .00 | .000 |
| 102.00 | 25.000 | .602 | 1.400 | .000 | | .000 | .000 | .00 | .000 |

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

DESIGN LOADS AT GUY LEVELS(NO ICE)

| GUY LEVEL | AVERAGE WIND VELOCITY (MPH) | VERTICAL LOAD (KIPS) | HORIZONTAL LOADS PARALLEL TO WIND (KIPS) | HORIZONTAL LOADS NORMAL TO WIND (KIPS) | MOMENTS PARALLEL TO WIND (K-FT) | MOMENTS NORMAL TO WIND (K-FT) | TORQUE (K-FT) |
|---|---|---|---|---|---|---|---|
| 1 | 101.4 | 1.00 | .74 | .00 | .00 | .00 | .00 |
| 2 | 108.3 | .00 | .00 | .00 | .00 | .00 | .00 |

DESIGN LOADS AT GUY LEVELS(ICE)

| GUY LEVEL | AVERAGE WIND VELOCITY (MPH) | VERTICAL LOAD (KIPS) | HORIZONTAL LOADS PARALLEL TO WIND (KIPS) | HORIZONTAL LOADS NORMAL TO WIND (KIPS) | MOMENTS PARALLEL TO WIND (K-FT) | MOMENTS NORMAL TO WIND (K-FT) | TORQUE (K-FT) |
|---|---|---|---|---|---|---|---|
| 1 | 87.8 | 1.40 | .60 | .00 | .00 | .00 | .00 |
| 2 | 93.8 | .00 | .00 | .00 | .00 | .00 | .00 |

STRUCTURE DEFLECTIONS

| ELEVATION (FT) | DEFLECTIONS PARALLEL TO WIND (FT) | DEFLECTIONS NORMAL TO WIND (FT) | SWAY PARALLEL TO WIND (DEGREES) | SWAY NORMAL TO WIND (DEGREES) | TWIST (DEGREES) |
|---|---|---|---|---|---|
| .00 | .000<1>(1) | .000<1>(1) | 1.05356<2>(2) | -.09685<3>(1) | .72084<1>(2) |
| 102.00 | .888<2>(2) | -.160<3>(1) | .30218<2>(2) | -.08579<3>(2) | .72084<1>(2) |
| 110.00 | .945<2>(2) | -.170<3>(1) | .49475<2>(2) | -.08451<3>(2) | .96363<1>(2) |
| 120.00 | 1.041<2>(2) | -.183<3>(2) | .57919<2>(2) | -.08345<3>(2) | 1.26713<1>(2) |
| 140.00 | 1.231<2>(2) | -.212<3>(2) | .47539<2>(2) | -.08320<3>(2) | 1.54881<1>(2) |
| 160.00 | 1.381<2>(2) | -.241<3>(2) | .43784<2>(2) | -.08542<3>(2) | 1.49057<1>(2) |
| 162.00 | 1.397<2>(2) | -.244<3>(2) | .45606<2>(2) | -.08578<3>(2) | 1.44943<1>(2) |
| 163.00 | 1.405<2>(2) | -.246<3>(2) | .47438<2>(2) | -.08578<3>(2) | 1.45753<1>(2) |
| 170.00 | 1.469<2>(2) | -.256<3>(2) | .56298<2>(2) | -.08578<3>(2) | 1.51423<1>(2) |
| 179.00 | 1.561<2>(2) | -.270<3>(2) | .59751<2>(2) | -.08578<3>(2) | 1.56548<1>(2) |
| 180.00 | 1.571<2>(2) | -.271<3>(2) | .59752<2>(2) | -.08578<3>(2) | 1.56548<1>(2) |

< > INDICATES GOVERNING WIND DIRECTION
( ) INDICATES GOVERNING LOAD CASE
LOAD CASE 1 is for no ice.
LOAD CASE 2 is for ice.

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

GUY TENSIONS

| GUY LEVEL | GUY SIZE | INITIAL TENSION (KIPS) | MAXIMUM TENSION (KIPS) | ULTIMATE STRENGTH (KIPS) | FACTOR OF SAFETY | **** MAXIMUM COMPONENTS OF GUY TENSION AT STRUCTURE *** VERTICAL (KIPS) | HORIZONTAL PARALLEL TO WIND (KIPS) | HORIZONTAL NORMAL TO WIND (KIPS) |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/8 EHS | 4.24 | 19.67<3>(2) | 42.40 | 2.16<3>(2) | 11.82<3>(2) | 15.36<1>(2) | 11.41<2>(2) |
| 2 | 3/4 EHS | 5.83 | 26.01<3>(2) | 58.30 | 2.24<3>(2) | 19.97<3>(2) | 16.20<1>(2) | 12.25<2>(2) |

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LOAD CASE 1 is for no ice.
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JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

## MAXIMUM ANCHOR LOADS

| ANCHOR NO. | ANCHOR RADIUS (FT) | LOCAL ANCHOR | ANCHOR ELEVATION (FT) | MAXIMUM VERTICAL COMPONENT (KIPS) | MAXIMUM HORIZONTAL COMPONENTS RADIAL (KIPS) | TANGENTIAL (KIPS) | ANCHOR BLOCK REQ'D | MAXIMUM RESULTANT (KIPS) | ANCHOR ROD REQ'D | ANCHOR ROD SLOPE FOR MAXIMUM RESULTANT (DEGREES) | (VERT/HORIZ) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 140.00 | 1 | .00 | 57.61<3>(2) | 61.90<3>(2) | -2.35<2>(2) | 10E | 84.59<3>(2) | GAC-59 | 42.9 | 11.2/12.0 |

## BASE PIER

MAXIMUM VERTICAL REACTION AT BASE = 160.20 KIPS
LOAD CASE ..... = 2
WIND DIRECTION..... = 2
BASE PIER REQUIRED..... = CB-11

## BASE SHEAR

MAXIMUM SHEAR REACTION AT BASE = 5.41 KIPS
LOAD CASE ..... = 1
WIND DIRECTION..... = 1

## BASE MOMENT

MAXIMUM MOMENT REACTION AT BASE = .00 FT-KIPS
LOAD CASE ..... = 0
WIND DIRECTION..... = 0

< > INDICATES GOVERNING WIND DIRECTION
( ) INDICATES GOVERNING LOAD CASE
LOAD CASE 1 is for no ice.
LOAD CASE 2 is for ice.

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

CUSTOMER: WIRELESS SOLUTIONS. DATE: 03/18/97 FILE NO: 35489PH BY: GEN

| SPAN NO. | ELEVATION (FT) | MAXIMUM LEG LOAD (KIPS) | LEG CAPACITY (KIPS) | MAX. MAST AXIAL LOAD (KIPS) | EULER BUCKLING LOAD (KIPS) | LEG SIZE | SECTION REQUIRED | BRACE SIZE | BRACE CAP. (KIPS) | MAXIMUM BRACE LOAD (KIPS) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | 53.40<2>(2) | 97.36 | 160.20<2>(2) | 322.11 | PIPE3.0 XS | 85H11 | TS1.50X11GA | 7.83 | 6.67*3>(2) |
| 1 | 10.20 | 69.41<3>(2) | | 157.93<2>(2) | | | | | | 5.17*3>(2) |
| 1 | 20.40 | 82.90<3>(2) | | 155.67<2>(2) | | | | | | 3.52<3>(2) |
| 1 | 30.60 | 91.50<1>(2) | | 153.40<2>(2) | | | | TS1.5X16GA. | 4.83 | 1.78<3>(2) |
| 1 | 40.80 | 94.00<1>(2) | | 151.14<2>(2) | | | | | | .08<2>(1) |
| 1 | 51.00 | 89.93<1>(2) | | 148.88<2>(2) | | | | | | -1.77<3>(2) |
| 1 | 61.20 | 80.01<3>(2) | | 146.61<2>(2) | | | | TS1.5X11GA. | 7.83 | -3.48<3>(2) |
| 1 | 71.40 | 65.06<3>(2) | | 144.35<2>(2) | | | | | | -5.09*3>(2) |
| 1 | 81.60 | 47.41<2>(2) | | 142.08<2>(2) | | | | | | -6.55*3>(2) |
| 1 | 91.80 | 74.49<2>(2) | 111.25 | 139.82<2>(2) | | 3.0XS | 85HX | TS1.5X16GA. | 4.83 | -7.84*3>(2) * |
| 1 | 102.00 | 105.99*2>(2) | | 137.55<2>(2) | | | | | | -8.94*3>(2) * |
| 2 | 102.00 | 104.36*2>(2) | 111.25 | 98.78<2>(2) | 695.71 | PIPE3.0XS | 85HXE | L2X2X1/4 | 18.09 | 7.95*3>(2) |
| 2 | 108.00 | 78.21<2>(2) | | 97.67<2>(2) | | | | | | 7.56*3>(2) |
| 2 | 110.00 | 69.90<2>(2) | | 97.30<2>(2) | | | | | | 7.42*3>(2) |
| 2 | 114.00 | 54.17<2>(2) | | 95.35<2>(2) | | | | | | 6.92*3>(2) |
| 2 | 120.00 | 32.94<2>(2) | | 94.24<2>(2) | | | | | | 5.26*3>(2) |
| 2 | 126.00 | 35.16<3>(2) | | 88.72<2>(2) | | | | | | 2.73<3>(2) |
| 2 | 132.00 | 40.87<3>(2) | | 87.60<2>(2) | | | | | | 2.20<3>(2) |
| 2 | 138.00 | 44.60<1>(2) | 80.77 | 86.49<2>(2) | | PIPE2.5XS | 84HX11 | TS1.5X11GA. | 7.02 | 1.67<3>(2) |
| 2 | 140.00 | 45.49<1>(2) | | 86.12<2>(2) | | | | | | .77<2>(2) |
| 2 | 144.00 | 38.97<3>(2) | | 80.97<2>(2) | | | | | | -2.20<3>(2) |
| 2 | 150.00 | 30.04<3>(2) | | 79.86<2>(2) | | | | | | -2.72<3>(2) |
| 2 | 156.00 | 33.17<2>(2) | | 78.74<2>(2) | | | | | | -3.22<3>(2) |
| 2 | 160.00 | 42.33<2>(2) | | 78.00<2>(2) | | | | | | -4.82<3>(2) |
| 2 | 162.00 | 49.14<2>(2) | | 73.22<2>(2) | | | | | | -7.16*3>(2) |
| TOP | 162.00 | 46.33<2>(2) | 80.77 | 9.85<1>(2) | 1932.54 | PIPE2.5 XS | 84HXE | L 2X1/4 | 18.09 | 6.45<3>(2) |
| TOP | 163.00 | 42.78<2>(2) | | 9.70<1>(2) | | | | | | 6.39<3>(2) |
| TOP | 170.00 | 20.35<2>(2) | | 7.27<1>(2) | | | | | | 5.67<3>(2) |
| TOP | 179.00 | 1.54<2>(2) | | 4.55<1>(2) | | | | | | 3.62<3>(2) |
| TOP | 180.00 | .00<1>(1) | | .00<1>(1) | | | | | | .00<1>(1) |

< > INDICATES GOVERNING WIND DIRECTION
( ) INDICATES GOVERNING LOAD CASE
LOAD CASE 1 is for no ice.
LOAD CASE 2 is for ice.

* BRACES ARE DIVIDED BY 2 DUE TO X-BRACIN

JOB TITLE:180 FT #80 GUYED TOWER ANALYSIS

CUSTOMER: WIRELESS SOLUTIONS. DATE: 03/18/97 FILE NO: 35489PH BY: GEN

| SPAN NO. | ELEVATION (FT) | MAXIMUM LEG TENSION (KIPS) | LEG SIZE | SECTION REQUIRED |
|---|---|---|---|---|
| 1 | 30.60 | -6.42<2>(1) | PIPE3.0 XS | 85H |
| 1 | 40.80 | -10.45<2>(1) | PIPE3.0 XS | 85H |
| 1 | 51.00 | -8.10<2>(1) | PIPE3.0 XS | 85H |
| 1 | 102.00 | -24.80<1>(1) | PIPE3.0 XS | 85H |
| 2 | 102.00 | -44.03<1>(1) | PIPE2.5 XS | 84HX |
| 2 | 108.00 | -20.35<1>(1) | PIPE2.5 XS | 84HX |
| 2 | 110.00 | -12.89<1>(1) | PIPE2.5 XS | 84HX |
| 2 | 162.00 | -6.86<1>(1) | PIPE2.5 XS | 84HX |
| TOP | 162.00 | -39.74<1>(2) | PIPE2.5 XS | 84HXE |
| TOP | 163.00 | -36.29<1>(2) | PIPE2.5 XS | 84HXE |
| TOP | 170.00 | -15.50<1>(2) | PIPE2.5 XS | 84HXE |

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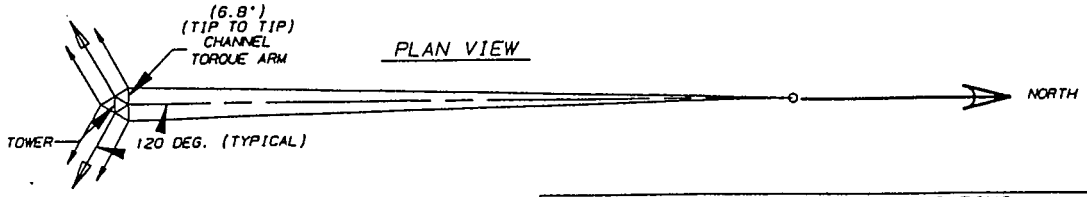
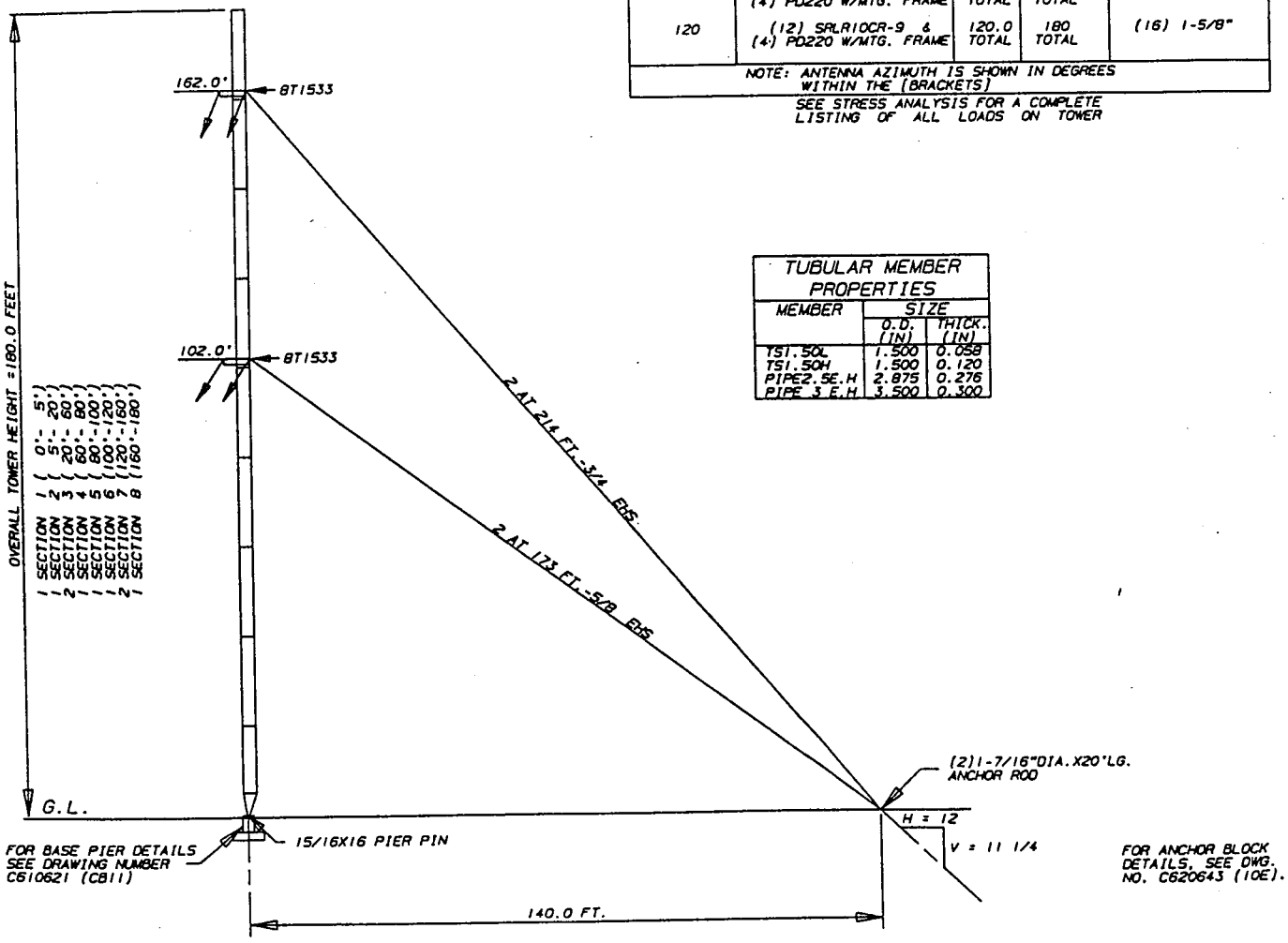
( ) INDICATES GOVERNING LOAD CASE
LOAD CASE 1 is for no ice.
LOAD CASE 2 is for ice.




| 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) |
| TOP | (12) SRL410CR-9 & (4) PD220 W/MTG. FRAME | 120.0 TOTAL | 180 TOTAL | (16) 1-5/8" |
| 1700 | (2) 6' DISHES [0] [180] | 75.0 TOTAL | 75.0 TOTAL | (2) EW63 |
| 160 | (12) SRL410CR-9 & (4) PD220 W/MTG. FRAME | 120.0 TOTAL | 180 TOTAL | (16) 1-5/8" |
| 140 | (12) SRL410CR-9 & (4) PD220 W/MTG. FRAME | 120.0 TOTAL | 180 TOTAL | (16) 1-5/8" |
| 120 | (12) SRLR10CR-9 & (4) PD220 W/MTG. FRAME | 120.0 TOTAL | 180 TOTAL | (16) 1-5/8" |
| NOTE: ANTENNA AZIMUTH IS SHOWN IN DEGREES WITHIN THE [BRACKETS] | | | | |

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

| TUBULAR MEMBER PROPERTIES | | |
|---|---|---|
| MEMBER | SIZE O.D. (IN) | SIZE THICK. (IN) |
| TS1.50L | 1.500 | 0.058 |
| TS1.50H | 1.500 | 0.120 |
| PIPE2.5E.H | 2.875 | 0.276 |
| PIPE 3 E.H | 3.500 | 0.300 |




ELEVATION VIEW

TOWER SITE: MONTVILLE , CT. (COUNT

## SECTION MEMBER SCHEDULE

| | ELEVATION (FT) | SECTION | LEG SIZE | LEG BOLTED FLANGE CONNECTION NO. | LEG BOLTED FLANGE CONNECTION SIZE | BRACE SIZE | BRACE BOLTED END CONNECTION NO. | BRACE BOLTED END CONNECTION SIZE |
|---|---|---|---|---|---|---|---|---|
| | 0 - 5 | 1 | PIPE 3 E.H | - | ----- | ---------- | --- | ---- |
| | 5 - 20 | 2 | PIPE 3 E.H | 4 | 3/4 | TS1.5OL | 1 | 1/2 |
| | 20 - 60 | 3 | PIPE 3 E.H | 4 | 3/4 | TS1.5OL | 1 | 1/2 |
| | 60 - 80 | 4 | PIPE 3 E.H | 4 | 3/4 | TS1.5OH | 1 | 1/2 |
| ♦ | 80 - 100 | 5 | PIPE 3 E.H | 4 | 3/4 | TS1.5OL | 1 | 1/2 |
| ♦ | 100 - 120 | 6 | PIPE 3 E.H | 4 | 3/4 | L 2X2X1/4 | 2 | 5/8 |
| ♦ | 120 - 160 | 7 | PIPE2.5E.H | 4 | 3/4 | TS1.5OH | 1 | 1/2 |
| ♦ | 160 - 180 | 8 | PIPE2.5E.H | 4 | 3/4 | L 2X2X1/4 | 2 | 5/8 |

NOTE: SECTION NUMBERS ARE FOR REFERENCE ONLY.
♦ THESE SECTIONS ARE DOUBLE BRACED. ALL OTHERS ARE SINGLE BRACED.
BRACING PATTERN: TENSION COMPRESSION SYSTEM WITH 2'- 5" NOMINAL PANEL SPACING.
FACE WIDTH = 3' - 5"

## TORQUE ARM SCHEDULE

| ELEVATION (FT) | TYPE | MAX. GUY SIZE ALLOWED (IN) | MAIN MEMBERS SIZE | MAIN MEMBERS CONNECTION NO. | MAIN MEMBERS CONNECTION SIZE | SECONDARY MEMBERS SIZE | SECONDARY MEMBERS CONNECTION NO. | SECONDARY MEMBERS CONNECTION SIZE |
|---|---|---|---|---|---|---|---|---|
| 102 | BT1533 | 5/8 | C15X33.9 | 4 | 7/8 | -------- | --- | ---- |
| 162 | BT1533 | 3/4 | C15X33.9 | 4 | 7/8 | -------- | --- | ---- |

## GUY WIRE DATA

| GUY ELEV. (FT). | SIZE (IN) | TYPE | ULT.STR. (KIPS) |
|---|---|---|---|
| 102 | 5/8 | EHS | 42.40 |
| 162 | 3/4 | EHS | 58.30 |

## 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 L 2X2X1/4 SHALL BE 36 KSI.
   TUBULAR BRACES SHALL BE 42 KSI.
   STRUCTURAL PLATES SHALL BE 36 KSI.
   CHANNELS FOR TORQUE ARMS 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. INITIAL TENSION OF GUY WIRES SHALL BE 10% OF THEIR ULTIMATE STRENGTHS.
12. THE FACTOR OF SAFETY OF GUYS AND THEIR CONNECTIONS SHALL NOT BE LESS THAN 2.0.
13. IT SHALL BE THE RESPONSIBILITY OF THE ERECTOR TO TEMPORARILY GUY THE STRUCTURE WHEN REQUIRED DURING ERECTION TO MAINTAIN THE STABILITY OF THE STRUCTURE AND TO PREVENT OVERLOADING ANY MEMBER OF THE STRUCTURE.
14. ALL HIGH STRENGTH BOLTS ARE TO BE TIGHTENED TO A "SNUGTIGHT" CONDITION AS DEFINED IN THE NOVEMBER 13, 1985, AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
15. PURCHASER SHALL VERIFY THE INSTALLATION IS IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR OBSTRUCTION MARKING AND LIGHTING.
16. TOLERANCE ON TOWER STEEL HEIGHT IS EQUAL TO PLUS 1% OR MINUS 1/2%.
17. 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.
18. DESIGN ASSUMES ALL ANTENNAS ARE MOUNTED SYMMETRICALLY TO MINIMIZE TORQUE.
19. WAVEGUIDE BRACE BRACKETS SHALL BE PROVIDED FROM 5'± TO TOP OF TOWER ON THREE TOWER FACES.
20. TOWER ORIENTATION PROVIDED BY THE CUSTOMER.
21. THE PURCHASER SHALL VERIFY THAT ACTUAL SITE SOIL PARAMETERS, MEET OR EXCEED E.I.A. "NORMAL" SOIL PARAMETERS.
22. DESIGN ASSUMES ALL TRANSMISSION LINES AND WAVEGUIDE BRACE BRACKETS ARE EQUALLY DISTRIBUTED ON THREE TOWER FACES.
23. ROHN SHALL HAVE THE OPTION TO REVIEW FINAL DISH LOCATIONS, AZIMUTHS AND MOUNTS TO VERIFY THAT ASSUMED TORQUE VALUES AND LOCAL STRESSES ARE NOT EXCEEDED.
24. DISH AZIMUTHS SHOWN ARE NOMINAL AZIMUTHS USED FOR DESIGN. ACTUAL AZIMUTHS (TO BE DETERMINED BY OTHERS) MUST NOT RESULT IN INCREASED DESIGN LOADS.

## REACTIONS

| AT | VERT. (+↓) | HORIZ. (+→) |
|---|---|---|
| BASE=0.0 FT | 160.2 KIPS | |
| 140.0 FT | -57.6 KIPS | 61.9 KIPS |

NEW LONDON)

| No.▲ Revision Description | ▲ Date | ▲ Rev By | ▲ Ckd By | ▲ Appd B |
|---|---|---|---|---|



ROHN

| | By | Date |
|---|---|---|
| Scale: NONE | | |
| Drawn: | CSR | 03/19/97 |
| Checked: | GEL | 3/19/97 |
| App. Eng.: | | 3/19/97 |
| App. Sales: | | 3/19/97 |

Title: 180' NO. 80 TOWER DESIGN FOR WIRELESS SOLUTIONS

ENG. FILE: 35489PH | DRAWING NO.: 8971656

TOWN OF MONTVILLE

Building Department

848-7166

APPROVED BUILDING PERMIT OR TRADES PERMIT
For 180 Days

Permit No: 13410 Approval Date: 4/17/97 Expiration Date: 10/17/97

Estimated Cost: Fees: PRF: 16.70 C.O: 25.00

Owner: Ken Thomas Address: 11 Dell Drive Tel: 434-6363

Job Location: 57 Cook Drive Code: 08

Contractor: Northeast Towers Address: Farmington Tel: 673-6004

Stick Built: Modular Home: Manufactured Home: Commercial: x

Addition: Garage: Car Port: Shed: Remodeling: Roofing:

Siding: Fireplace: Chimney: Windows: Pool: Demolition:

Plumbing: Heating: Electrical: Air Conditioning: Gas:

Patio: Porch: Deck: Retaining Wall: New: Repair/Removal:

Type of material used/discription: 180' radio tower

Size: Type of Heat: Fireplace:

No.of Stories: No. Rooms: Breezeway

No. Baths: Garage: Use:

I hereby certify that the proposed work will conform to the Basic Building Code and all other Codes as adopted by the State of Connecticut, and the Town of Montville.

Applicant's Signature: [signature] Date: 4-17-97

If signed by Contractor, type of license/registration & No: 00373

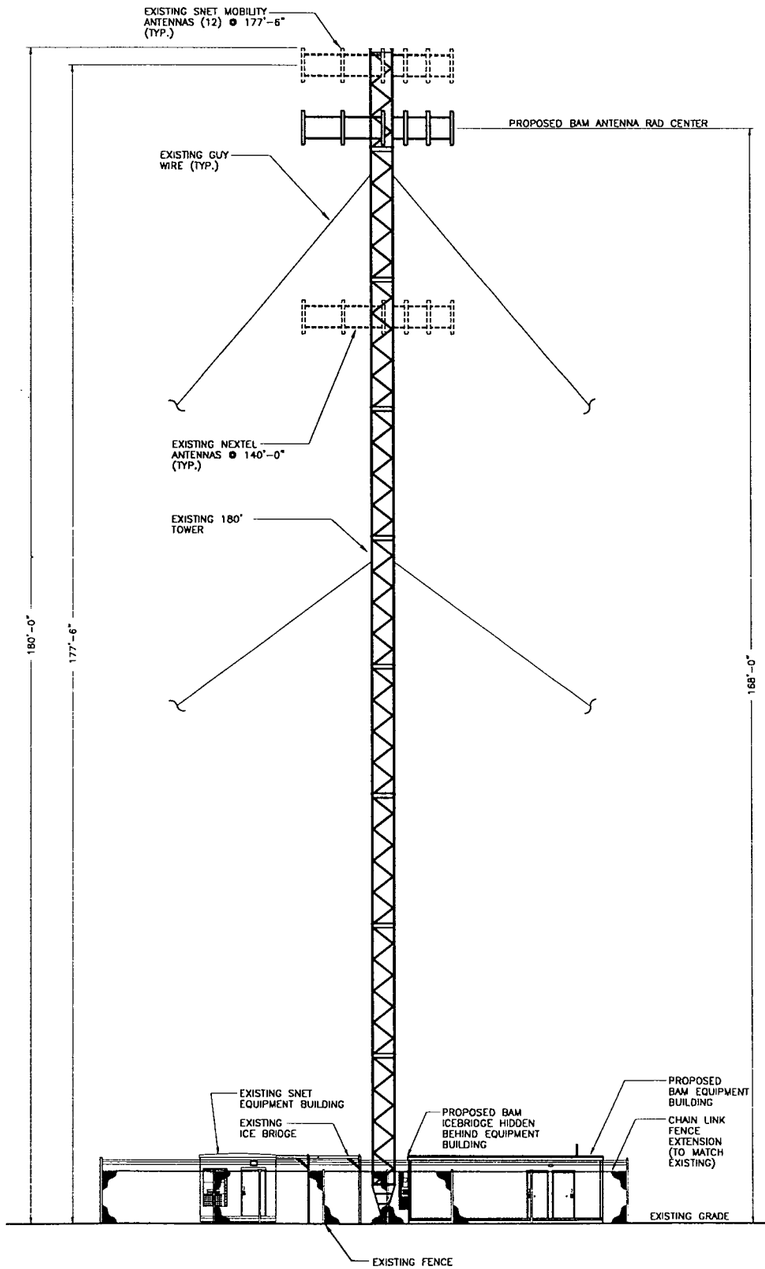
Building Official's Signature: Russell H Stauffer II Date: 4-17-97

Date of Health Dept. Approval: N/A

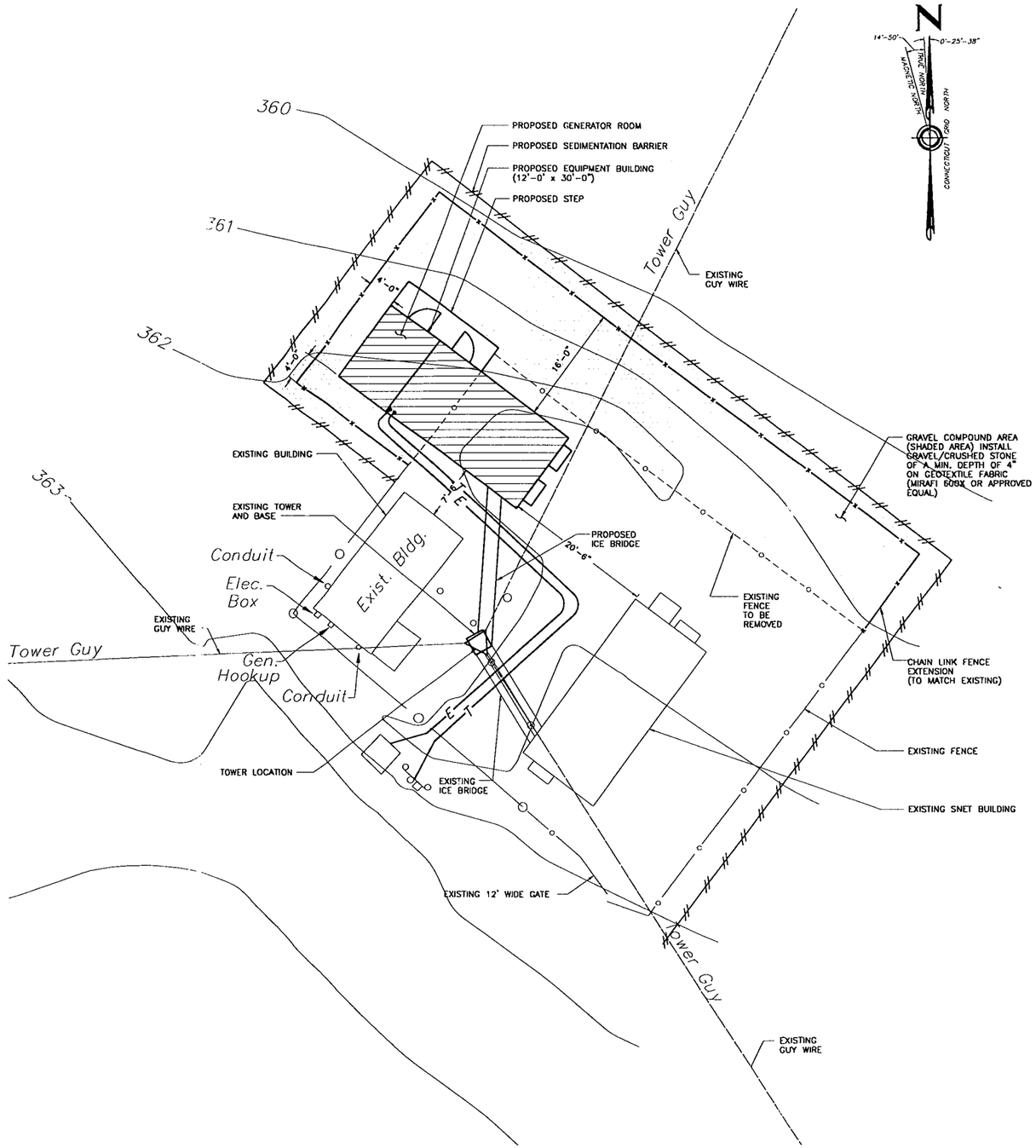
Date of Zoning Approval: OK

THIS IS TO INFORM YOU THAT UNDER THE CONNECTICUT AMENDMENT OF THE BUILDING CODE, SECTION 119.3 A CERTIFICATE OF OCCUPANCY IS REQUIRED PRIOR TO ANY USE OF THE STRUCTURE.

A MINIMUM OF 24 HOUR NOTICE TO THE BUILDING DEPARTMENT IS REQUIRED FOR INSPECTIONS.




2 SC-1 **TOWER ELEVATION**
SCALE: 3/32" = 1'-0"




1 SC-1 **SITE PLAN**
SCALE: 1/8" = 1'-0"

A-1.dwg 8-18-98 9:26:01 am EST

**Bell Atlantic Mobile**

A&E FIRM
**URS Greiner, Inc. A-E-S**
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

A&E SEAL

PROJECT NO: F301727.09/F02

DRAWN BY: DFG

CHECKED BY:

ISSUED FOR

| | | |
|---|---|---|
| 1 | 8/18/98 | REVIEW |



**COOK ROAD**
MONTVILLE, CT

SCALE: AS SHOWN

DATE: 08-17-98

DRAWING 4 OF 2

**SITE PLAN & TOWER ELEVATION**

**SC-1**