STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
www.ct.gov/csc

March 27, 2006

Steven Levine
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-066-060308** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 123 Campville Hill Road, Harwinton, Connecticut.

Dear Mr. Levine:

At a public meeting held on March 22, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. The coaxial cables (to be installed on the outside of the tower) are painted a color to match the monopole, if technically feasible.
2. The anchor bolts are modified per the attached drawings of the structural analysis report dated February 13, 2006 and sealed by J. Darrin Holt, Ph.D, P.E.
3. A signed letter from a professional engineer is submitted to the Council to certify that the anchor bold modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated March 8, 2006, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: The Honorable Frank J. Chiaramonte, First Selectman, Town of Harwinton
William J. Tracy, Jr., Planning Chairman, Town of Harwinton
Global Signal Acquisitions II LLC
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels, LLP
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Christine Farrell, T-Mobile, Inc.
Thomas F. Flynn III, Nextel Communications, Inc.
Clayton M. Pitchure, Site Quest, Ltd., Project Manager

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March 16, 2006

The Honorable Frank J. Chiaramonte
First Selectman
Town of Harwinton
Town Hall
100 Bentley Drive
Harwinton, CT 06791

RE: **EM-CING-066-060308** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 123 Campville Hill Road, Harwinton, Connecticut.

Dear Mr. Chiaramonte:

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

The Council will consider this item at the next meeting scheduled for Wednesday, March 22, 2006 at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by noon on March 22, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: William J. Tracy, Jr., Planning Chairman, Town of Harwinton

EM-CING-066-060308

ORIGINAL

New Cingular Wireless PCS, LLC
500 Enterprise Drive Rocky Hill,
Connecticut 06067-3900
Phone: (860) 513-7636
Fax: (860) 513-7190

RECEIVED
MAR 0 8 2006
CONNECTICUT
SITING COUNCIL

March 8, 2006

Ms. Pam Katz, Chairman, and
Members of the Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Notice of Exempt Modification – Existing Sprint Telecommunications Tower Facility at 123 Campville Hill Road, Harwinton, Connecticut

Dear Chairman Katz and Members of the Council:

New Cingular Wireless PCS, LLC ("Cingular") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower off Campville Hill Road in Harwinton, Connecticut. Cingular operates under licenses issued by the Federal Communications Commission ("FCC") to provide cellular and PCS mobile telephone service in Litchfield County, which includes the area to be served by Cingular's proposed installation.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to the 1st Selectman of Harwinton.

Existing Facility

The Harwinton facility is located at 123 Campville Hill Road, which lies approximately 2/3 mile east of CT Route 8 and 2 miles south of CT Route 118. Tower coordinates (NAD 83) are N 41° 44' 12" and W 73° 05' 51".

The facility, which is situated on land leased from the Harwinton Rod & Gun Club, is controlled and operated by Global Signal Acquisitions II LLC, 301 N. Cattlemen Road, Sarasota Florida 34222

The Harwinton facility was initially approved by local P&Z authorities under an application by Sprint PCS, which has since subleased the entire site to Global for management. AT&T Wireless co-located on the tower in 2002 under an exempt modification approved by the Council. As a condition of federal approvals for the merger between AT&T Wireless and Cingular, however, the AT&T installation has been divested, and the former AT&T antennas and equipment at the site

are now owned and operated by Alltel. Cingular, therefore, must now co-locate separately on this tower to maintain wireless coverage in the Harwinton area.

The Campville Hill Road facility consists of a 177-foot monopole within a 62' x 71' compound surrounded by a 6 foot-high chain link fence. Sprint, Alltel, Verizon, T-Mobile, and Nextel operate wireless communications equipment at the facility.

Proposed Modifications

As shown on the attached drawings and as further described below, Cingular proposes to install up to six 75"-high Kathrein AP14/17-880 dual band panel antennas or their equivalent, with antennas at a centerline height of approximately 122 feet above ground level. Cingular's coaxial cables will be strapped tightly to the outside of the tower due to the lack of room inside the structure. Cingular also proposes to place an 11' 6" x 20' prefabricated concrete equipment building in the existing compound at the base of the tower.

Attached to this Notice are a site location map, a site plan, tower profile, and a structural analysis report that shows the tower will be structurally capable of supporting the proposed Cingular telecommunications equipment once proposed modifications are complete.

Statutory Considerations

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

1. The height of the overall structure will be unaffected.

2. The proposed changes will not affect the property boundaries. All new construction will take place on property controlled by Global Signal and within the existing fence.

3. The proposed additions will not increase the noise level at the existing facility by six decibels or more.

4. Operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the FCC. The "worst-case" exposure calculation in accordance with FCC OET Bulletin No. 65 (1997) for a point of interest at the base of the tower in relation to the operation of the proposed antenna array is as follows:

Company	Centerline Height (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density† (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Sprint *	177	1962.5	12	500	0.0689	1.0000	6.89
T-Mobile *	167	1935	12	250	0.0387	1.0000	3.87
Alltel *	157	880	12	250	0.0438	0.5867	7.46
Verizon *	147	1900	3	285	0.0142	1.0000	1.42
Nextel *	137	851	12	100	0.0230	0.5673	4.05
Cingular	122	880 - 894	6	296	0.0429	0.5867	7.31
Cingular	122	1930 - 1935	3	427	0.0309	1.0000	3.09
Total							**34.10%**

* Power density parameters from Nextel's notice in EM-NEXTEL-066-040511.

† Please note that the standard power density equation provided by the Council in its memo of January 22, 2001 incorporates a ground reflection factor of 2.56 (i.e., the square of 1.6) as described in FCC OET Bulletin No. 65.

As the table demonstrates, the cumulative "worst-case" exposure would be approximately 34 % of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the tower facility would thus be within applicable standards.

For the foregoing reasons, Cingular respectfully submits that proposed changes at the Harwinton site constitute an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7636 or Christopher Fisher, Esq. at (914) 761-1300 with questions concerning this notice. Thank you for your consideration in this matter.

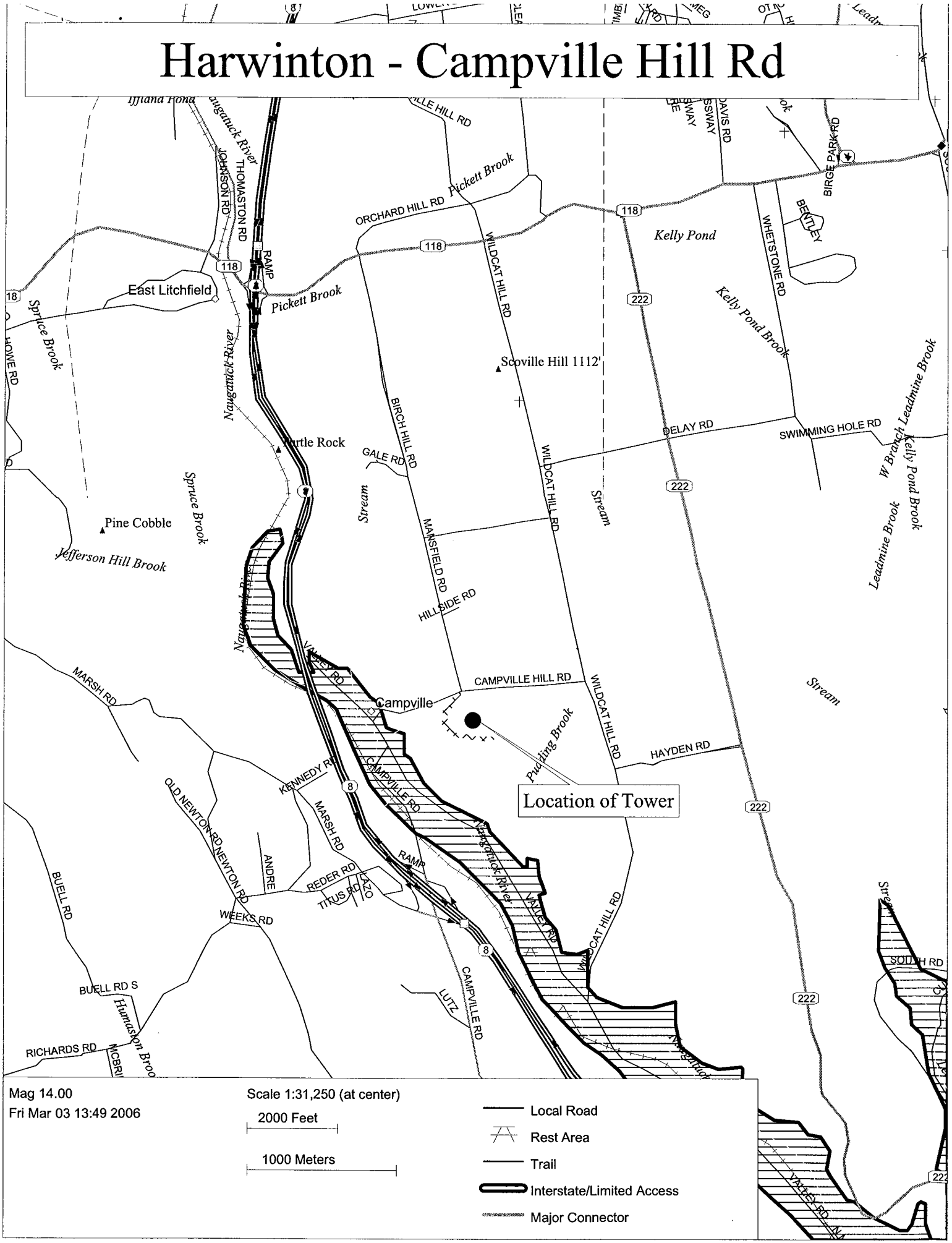
Respectfully yours,

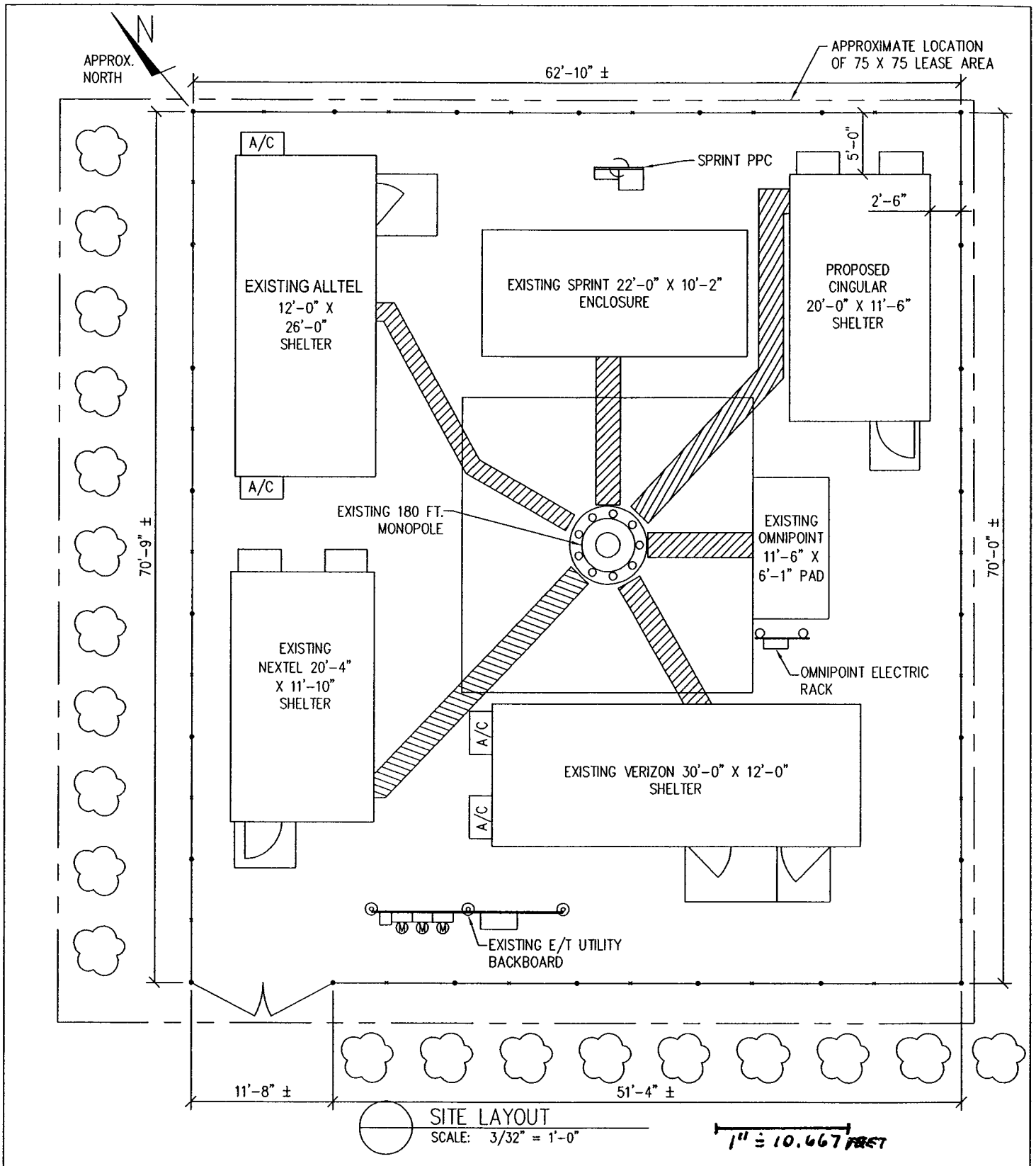
Steven Levine
Real Estate Consultant

Enclosures

cc: Honorable Frank J. Chiaramonte, 1st Selectman, Town of Harwinton
Michele G. Briggs, Manager of Real Estate
Christopher B. Fisher, Esq.

Harwinton - Campville Hill Rd





Project: HARWINTON ROD & GUN CLUB Address: 123 CAMPVILLE HILL RD HARWINTON, CT 06791 Cascade No: CT33XC111	cingular raising the bar		Approved By: IMP ENGINEER: DATE: Approved By: IMP MANAGER: DATE: Approved By: SSUSA DIRECTOR: DATE: Approved By: CLIENT: DATE:
Exhibit No.	Drawing Name: SITE LAYOUT	IMP. MANAGER:	IMP. ENGINEER	Date:

EXISTING (6) SPRINT ANTENNAS
177'-0" ± A.G.L.

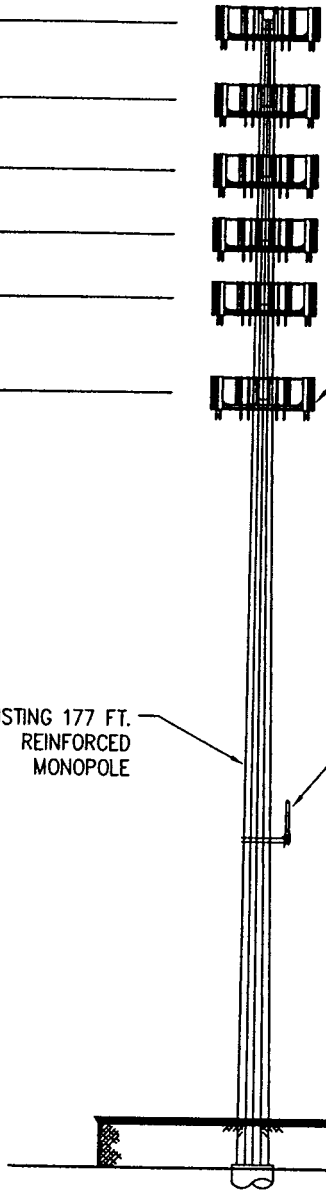
EXISTING (3) OMNIPOINT ANTENNAS
167'-0" ± A.G.L.

EXISTING (9) ALLTEL ANTENNAS
157'-0" ± A.G.L.

EXISTING (12) VERIZON ANTENNAS
147'-0" ± A.G.L.

EXISTING (12) NEXTEL ANTENNAS
137'-0" ± A.G.L.

PROPOSED (6) CINGULAR ANTENNAS
122'-0" ± A.G.L.



PROPOSED (6) CINGULAR ANTENNAS KATHREIN AP 14/17-880 WITH (12) POWERWAVE TMA'S AT 122 FT. AND (12) RUNS OF 1-5/8" CABLES ROUTED OUTSIDE THE MONOPOLE

EXISTING 177 FT. REINFORCED MONOPOLE

EXISTING SPRINT GPS ANTENNA

ELEVATION
SCALE: 1"=30'-0"

30'

Project: HARWINTON ROD & GUN CLUB Address: 123 CAMPVILLE HILL RD HARWINTON, CT 06791 Cascade No.: CT33XC111	cingular raising the bar			Approved By: IMP ENGINEER: DATE: Approved By: IMP MANAGER: DATE: Approved By: SSUSA DIRECTOR: DATE: Approved By: CLIENT: DATE:
Exhibit No.	Drawing Name: ELEVATION	IMP. MANAGER:	IMP. ENGINEER	Date:

FDH ENGINEERING

Structural Analysis for Global Signal

177' Monopole

Site Name: Scoville Hill/Harwinto, CT
Site ID: 3017696 - Cingular

FDH Project Number 06-0232E

Prepared By:

Holly M. Rose, EI
Senior Project Engineer

Reviewed By:

J. Darrin Holt, Ph.D, PE
President
CT PE License No. 22988

FDH Engineering, Inc.
PO Box 33037
Raleigh, NC 27636-3037
(919)-755-1012
info@fdh-inc.com

STATE OF CONNECTICUT ★ J. DARRIN HOLT ★ LICENSED PROFESSIONAL ENGINEER

2/13/06

February 13, 2006

Prepared pursuant to EIA/TIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

TABLE OF CONTENTS

557 B Pylon Drive Raleigh, NC 27606 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

EXECUTIVE SUMMARY

At the request of Global Signal, FDH Engineering performed a structural analysis of the monopole located in Harwinton, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *TIA/EIA-222-F* standards. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Summit Manufacturing (Job No. 10633) original design drawings dated August 2, 2000, Hutter Tranka Engineering (Project No. 04073) modification drawings date August 4, 2004, and Global Signal.

The *basic design wind speed* per *ANSI TIA/EIA-222-F* standards is 80 MPH without ice and 70 MPH with ½" radial ice.

Conclusions

With the existing and proposed antennas from Cingular in place at 122 ft., the tower does not meet the requirements of the TIA/EIA-222-F standards. However, provided the foundation was modified per the modification drawings (see Hutter Tranka Engineering Modification Drawings), the foundation should be adequate to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH is accurate (i.e., the steel data, tower layout, current antenna loading, and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax may be installed on the outside of the pole's shaft in a single row.
2. Modification to the anchor bolts is required to support the proposed and existing loading (contact Hutter Tranka Engineering for revised design of anchor bolt modification).

557 B Pylon Drive Raleigh, NC 27606 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

No.	Elevation (ft)	Coax and Lines[1]	Carrier	Description
1-12	177	(12) 1-5/8"	Sprint	(12) Decibel DB980H90
13-18	168	(12) 1-5/8"	T-Mobile	(6) EMS RR90-17
19-27	157	(11) 1-5/8"	AT&T	(4) Allgon 7143.26 (2) Allgon 7144.26 (2) Allgon 7250 (1) Allgon 7262
28-39	147	(12) 1-5/8"	Verizon	(12) Decibel DB950G85E-M
40-51	137	(12) 1-5/8"	Nextel	(12) Decibel DB844H90

1 Coax installed inside pole's shaft, unless otherwise stated.

Proposed Loading:

No.	Elevation (ft)	Coax and Lines	Carrier	Description
1-6	122	(12) 1-5/8" [1]	Cingular	(6) Scala AP14/17-880/1940/088D/ADT/XP + (12) TMAs

1 Cingular will install coax on the outside of the pole.

557 B Pylon Drive Raleigh, NC 27606 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	55 ksi
Anchor Bolts	75 ksi

Table 3 displays the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components (80 MPH without ice)

Member Type	Elevation (ft.)	Existing and Proposed Loading Max. % Allowable Stress
Section 1	130 to 177	65%
Section 2	85 to 130	92%
Section 3	40 to 85	101%
Section 4	0 to 40	98%
Base Plate		OK
Anchor Bolts		**NG**

557 B Pylon Drive Raleigh, NC 27606 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

Table 4 – Maximum Base Reactions

Base Reactions	Linear (w/o ice)	Non-Linear (w/o ice)
Axial	42 k	42 k
Shear	29 k	29 k
Moment	3,506 k-ft	3,691 k-ft

GENERAL COMMENTS

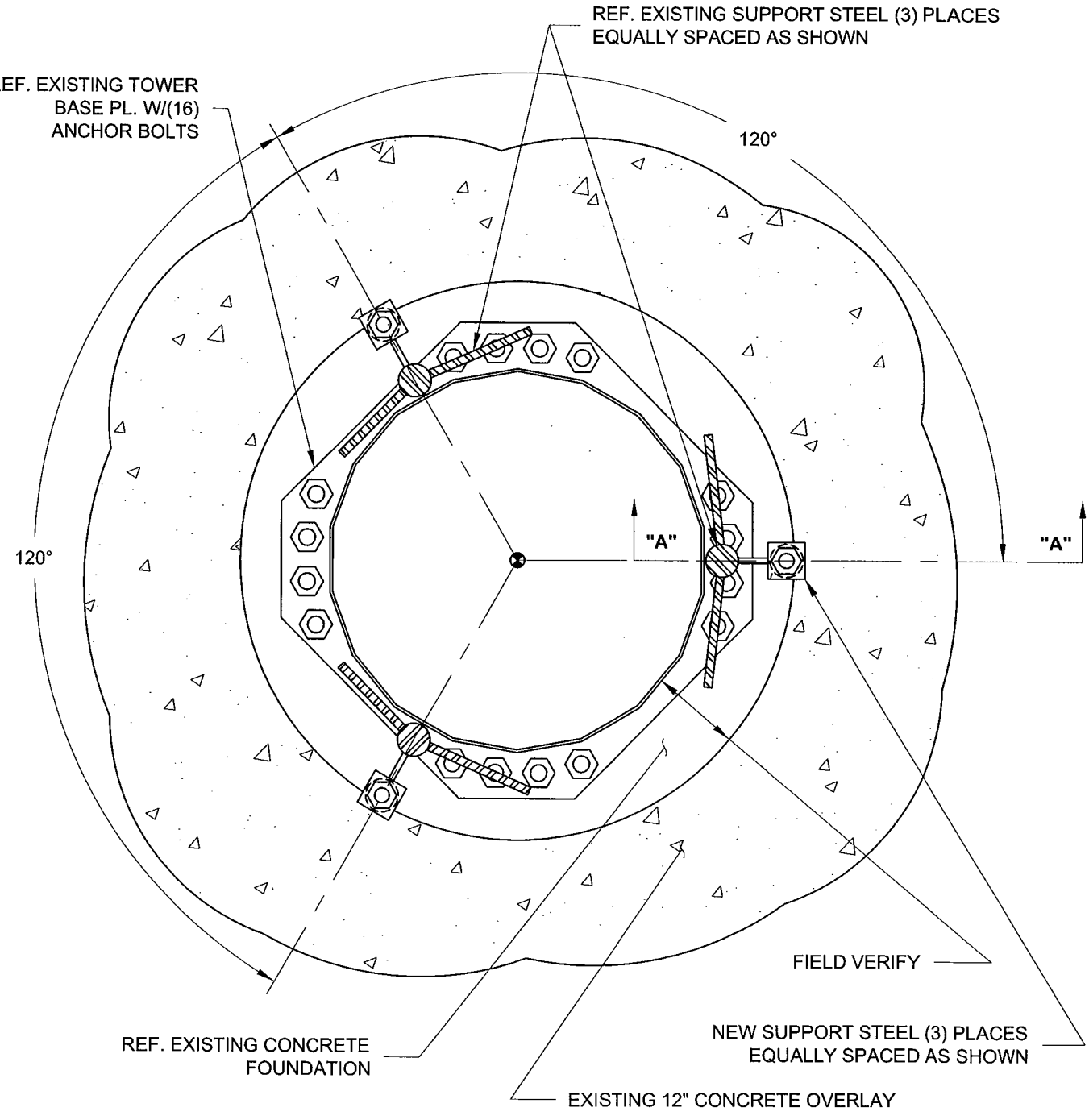
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of Global Signal to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

557 B Pylon Drive Raleigh, NC 27606 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

TOWER #: 3017696



PLAN VIEW

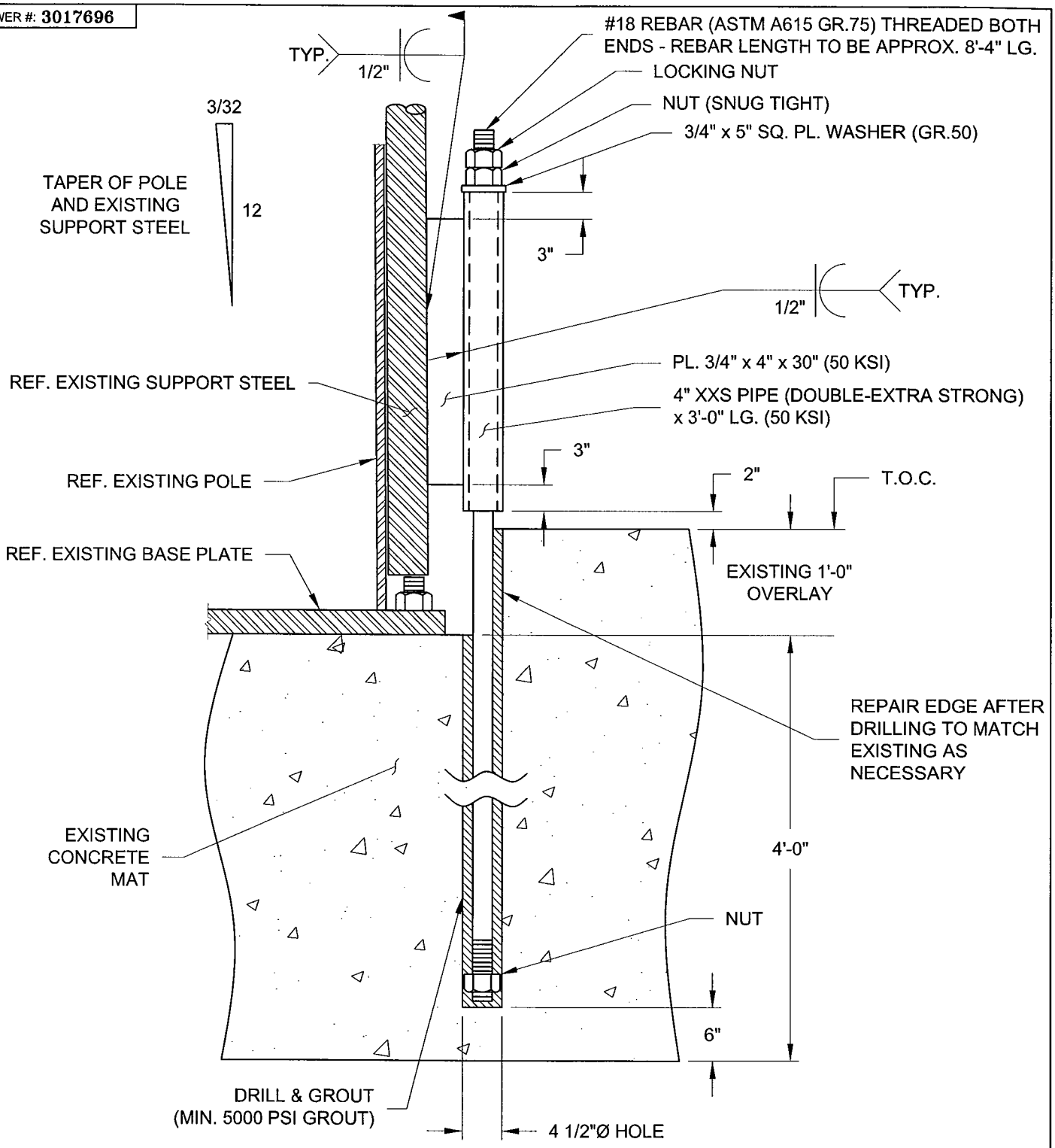
NOTES:

1. SEE PG. 2 OF 3 FOR SECTION "A-A".

ANALYSIS DATE 11/15/2005	LEASE#	DWG. TITLE ANCHOR BOLT MODIFICATION HARWINTON GUN CLUB, CT
VERIFIED BY KCW	LEGACY NUMBER CT33XC111	
	DRAFTED BY BPS	SHEET: 1 OF 3

global signal℠ Meeting needs. Exceeding expectations.

TOWER #: 3017696



SECTION "A - A"
FROM PG. 1 OF 3 - TYP. (3) PLACES

NOTES:
1. SEE PG. 1 OF 3 FOR PLAN VIEW.
2. EXISTING REBAR NOT SHOWN IN FOUNDATION MAT. SOME CUTTING OF EXISTING REBAR MAY BE NECESSARY.
3. IT MAY BE NECESSARY TO DRILL THROUGH EDGE OF CONCRETE OVERLAY.

ANALYSIS DATE	LEASE#	DWG. TITLE
11/15/2005		ANCHOR BOLT MODIFICATION HARWINTON GUN CLUB, CT
VERIFIED BY: KCW	LEGACY NUMBER: CT33XC111	
	DRAFTED BY: BPS	SHEET: 2 OF 3

global signal℠ Meeting needs. Exceeding expectations.

TOWER #3017696

NOTES AND SPECIFICATIONS

GENERAL:

1. THE MODIFICATIONS OUTLINED IN THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE EIA/TIA-222-F STANDARD.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS PRIOR TO FABRICATION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROPER FIT AND CLEARANCE IN THE FIELD. CONTACT GLOBAL SIGNAL ENGINEERING DEPARTMENT IF ANY DISCREPANCIES EXIST.
3. THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, TECHNOLOGIES, SEQUENCES AND PROCEDURES.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ON-SITE SAFETY ASSOCIATED WITH THE WORK TO BE PERFORMED. ALL SAFETY REQUIREMENTS AS DICTATED BY OSHA AND THE LOCAL JURISDICTIONS SHALL BE FOLLOWED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ITS OWN PERSONNEL AS WELL AS THE PUBLIC AFFECTED BY THE WORK IN THE VICINITY OF THE JOB SITE.
6. THE CONTRACTOR SHALL ALS0 BE RESPONSIBLE FOR THE PROTECTION OF THE PROPERTY IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL USE THE PRECAUTIONARY MEANS NECESSARY FOR ADEQUATE PROTECTION.

STEEL CONSTRUCTION:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL PLATE STEEL SHALL CONFORM TO A572 GRADE 50 UNLESS NOTED OTHERWISE. ALL CHANNELS C8 AND LARGER SHALL CONFORM TO A572 GRADE 50. ALL CHANNELS C6 AND SMALLER SHALL CONFORM TO A572 GRADE 65.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO GLOBAL SIGNAL ENGINEERING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE ALL FABRICATED STEEL ASSEMBLIES INCLUDING MONOPOLE/TOWER EXTENSIONS.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND AS FOLLOWS, UNLESS OTHERWISE NOTED.
   A. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION AND WELDING TO THE GREATEST EXTENT POSSIBLE.
   B. ALL DINGS, SCRAPES, MARS AND WELDS IN THE GALVANIZING AREA SHALL BE COATED WITH A ZINC-RICH PAINT, APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
   C. IF THE STRUCTURE WAS ORIGINALLY PAINTED, AFTER ZINC-RICH PAINT IS DRY, OVERCOAT WITH AN APPROPRIATE PAINT WITH THE SAME COLOR AS THE EXISTING.

STEEL CONSTRUCTION (CONT.):

5. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON DRAWINGS.
6. CONNECTIONS SHALL BE CONSTRUCTED AS FOLLOWS:
   A. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, UNLESS OTHERWISE NOTED.
   B. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
   C. THE WELDER(S) SHOULD BE QUALIFIED FOR THE METHODS AND POSITIONS TO BE USED AND SHOULD HAVE EXPERIENCE WELDING GALVANIZED MATERIALS.
   D. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM WELD SIZE PER TABLE J2.4 IN THE AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
   E. ALL EXISTING GALVANIZING IN WELD AREAS SHALL BE GROUND OFF PRIOR TO WELDING.
   F. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRATE OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1 REPAIR ALL WELDS AS NECESSARY.
   G. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
7. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
8. ALL LINDAPTOR HOLLOBOLTS SHALL BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.

ANCHOR INSTALLATION IN CONCRETE:

1. CONTRACTOR SHALL VERIFY THAT DRILLING CLEARANCE IS ADEQUATE PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER IF A CLEARANCE PROBLEM EXISTS.
2. USE COMPRESSED AIR TO BLOW ANY REMAINING DEBRIS OUT OF THE NEWLY DRILLED HOLES.

REV	DESCRIPTION	DATE

global signal™
Meeting needs. Exceeding expectations

DATE: 11/15/2005
LEGACY SITE NUMBER: CT33XC111
DRAFTED BY: BPS

DWG. TITLE
NOTES AND SPECIFICATIONS
HARWINTON GUN CLUB. CT
SHEET: 3 OF 3
SITE NUMBER

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7636
Fax: (860) 513-7190

March 8, 2006

Honorable Frank J. Chiaramonte
1st Selectman, Town of Harwinton
Town Hall, 100 Bentley Drive
Harwinton, Connecticut 06791

Re: Notice of Exempt Modification – Existing Global Signal Telecommunications Tower Facility at 123 Campville Hill Road, Harwinton, Connecticut

Dear Mr. Chiaramonte:

New Cingular Wireless PCS, LLC ("Cingular") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 123 Campville Hill Road in Harwinton, Connecticut.

The facility, which is situated on land leased from the Harwinton Rod & Gun Club, is controlled and operated by Global Signal Acquisitions II LLC, 301 N. Cattlemen Road, Sarasota Florida 34222.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council as required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73. Please accept this letter as notification to the Town of Harwinton under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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

Sincerely,

Steven Levine
Real Estate Consultant

Enclosure

EM-CING-066-060308

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SITING COUNCIL

Structural Analysis for Global Signal

177' Monopole

Site Name: Scoville Hill/Harwinto, CT
Site ID: 3017696 - Cingular

FDH Project Number 06-0232E

Prepared By:

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Reviewed By:

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February 13, 2006

STATE OF CONNECTICUT
J. DARRIN HOLT
No. 22988
LICENSED PROFESSIONAL ENGINEER
2/13/06

Prepared pursuant to EIA/TIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

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EXECUTIVE SUMMARY

At the request of Global Signal, FDH Engineering performed a structural analysis of the monopole located in Harwinton, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *TIA/EIA-222-F* standards. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Summit Manufacturing (Job No. 10633) original design drawings dated August 2, 2000, Hutter Tranka Engineering (Project No. 04073) modification drawings date August 4, 2004, and Global Signal.

The *basic design wind speed* per *ANSI TIA/EIA-222-F* standards is 80 MPH without ice and 70 MPH with ½" radial ice.

Conclusions

With the existing and proposed antennas from Cingular in place at 122 ft., the tower does not meet the requirements of the TIA/EIA-222-F standards. However, provided the foundation was modified per the modification drawings (see Hutter Tranka Engineering Modification Drawings), the foundation should be adequate to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH is accurate (i.e., the steel data, tower layout, current antenna loading, and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax may be installed on the outside of the pole's shaft in a single row.
2. Modification to the anchor bolts is required to support the proposed and existing loading (contact Hutter Tranka Engineering for revised design of anchor bolt modification).

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APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

No.	Elevation (ft)	Coax and Lines[1]	Carrier	Description
1-12	177	(12) 1-5/8"	Sprint	(12) Decibel DB980H90
13-18	168	(12) 1-5/8"	T-Mobile	(6) EMS RR90-17
19-27	157	(11) 1-5/8"	AT&T	(4) Allgon 7143.26 (2) Allgon 7144.26 (2) Allgon 7250 (1) Allgon 7262
28-39	147	(12) 1-5/8"	Verizon	(12) Decibel DB950G85E-M
40-51	137	(12) 1-5/8"	Nextel	(12) Decibel DB844H90

1 Coax installed inside pole's shaft, unless otherwise stated.

Proposed Loading:

No.	Elevation (ft)	Coax and Lines	Carrier	Description
1-6	122	(12) 1-5/8" [1]	Cingular	(6) Scala AP14/17-880/1940/088D/ADT/XP + (12) TMAs

1 Cingular will install coax on the outside of the pole.

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RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	55 ksi
Anchor Bolts	75 ksi

Table 3 displays the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components (80 MPH without ice)

Member Type	Elevation (ft.)	Existing and Proposed Loading Max. % Allowable Stress
Section 1	130 to 177	65%
Section 2	85 to 130	92%
Section 3	40 to 85	101%
Section 4	0 to 40	98%
Base Plate		OK
Anchor Bolts		**NG**

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Table 4 – Maximum Base Reactions

Base Reactions	Linear (w/o ice)	Non-Linear (w/o ice)
Axial	42 k	42 k
Shear	29 k	29 k
Moment	3,506 k-ft	3,691 k-ft

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of Global Signal to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

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By	HMR	Date	2/13/2006
Job No.	06-0232E		
Revision No.		Date	
Pole	177 ft. Monpole		
Location	Scoville Hill/Harwinto, CT		
Site	3017696		
Owner	Global Signal		
Design	80 MPH No Ice		
	69.6 MPH with Ice		

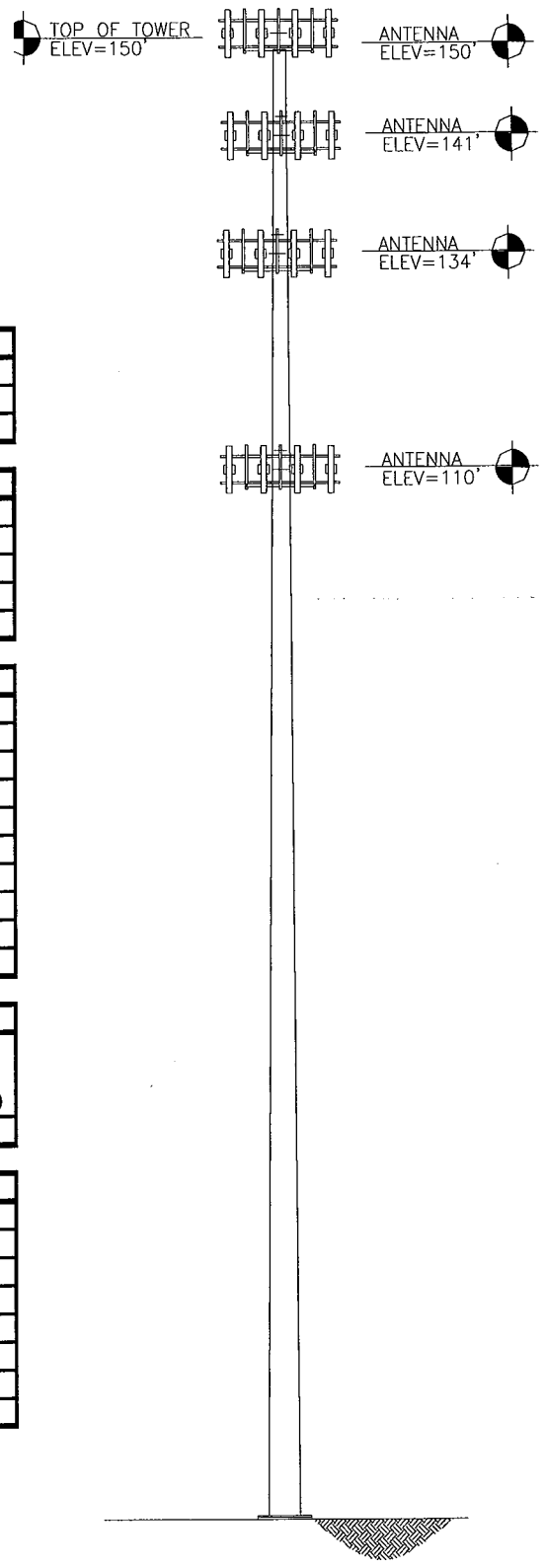
Load Cases		
Case 1	80 MPH NO ICE	DESIGN WIND
Case 2	69.6 MPH w/ 1/2" radia Ice	
Case 3	50 MPH	OPERATIONAL

Pole Specifications	
Pole Shape Type:	18-sided
Taper:	0.17483 in/ft
Shaft Steel:	Fy = 65 ksi
Base Plate Steel:	Fy = 55 ksi
Anchor Bolts:	(16) 2-1/4" Fy = 75 ksi

Appurtenance List		
No.	Elevation	Description
1-12	177	(12) DB980H0 with (12) 1-5/8" coax
13-18	168	(6) RR90-17-A1 with (12) 1-5/8" coax
19-27	157	(4) 7143.26 (2) 7144.26 with (11) 1-5/8" coax
		(2) 7250 (1) 7262
28-39	147	(12) DB950G85E-M with (12) 1-5/8" coax
40-51	137	(12) DB844H90 with (12) 1-5/8" coax
52-57	122	(6) AP14/17-880/1940/088D/ADT-XP with (12) 1-5/8" coax
		(12) TMA

Elevation	80 MPH WIND		50 MPH WIND	
	Lateral Deflection (In)	Rotation (Sway) (Degrees)	Lateral Deflection (In)	Rotation (Sway) (Degrees)
Top of Monopole (177 ft.)	201.8	9.7	78.8	3.8

Shaft Section Data					
Shaft Section	Sect. Length (ft)	Plate Thickness (in.)	Lap Splice (in.)	Diam. Across Flats (in)	
				Top	Bottom
1	47.25	0.2188	45.00	22.00	30.24
2	49.50	0.2500	57.00	29.17	37.84
3	49.50	0.3125	69.00	36.51	45.17
4	45.00	0.3750	0.00	43.54	51.41



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APPENDIX

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FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

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Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:80 MPH Without Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Segment Properties: (Max Segment Length = 5 ft)

LOAD CASE 1: BASIC WIND VELOCITY = 80 MPH.
Design Loads per TIA/EIA-22-F Standard: Gust Factor.....Gh= 1.69
Pole DL overload Factor= 1
Per TIA/EIA Table 1: Note3: For all cross sectional shapes,
Force coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Segment Feature Location	Segment Elev. (ft)	Diam. Across Flates (in)	Cross Section Area (in^2)	Inertia (in^4)	Expos Coeff. [Kz]	Veloc. Press. [qz] (psf)	Force Coeff. [Cf]	Projected Aera Shaft Segment [Ae] (ft^2)	[Cf*Ae] (ft^2)
top	177.000	22.000	15.126	906.4	1.616	26.475	0.650	3.753	2.439
	175.000	22.349	15.368	950.6	1.611	26.389	0.650	9.640	6.266
	170.000	23.220	15.973	1067.4	1.597	26.172	0.650	3.959	2.574
	168.000	23.569	16.216	1116.7	1.592	26.083	0.650	6.050	3.932
	165.000	24.092	16.579	1193.5	1.584	25.949	0.650	10.378	6.745
	160.000	24.964	17.184	1329.0	1.570	25.722	0.650	6.404	4.162
	157.000	25.487	17.547	1415.1	1.561	25.583	0.650	4.343	2.823
	155.000	25.836	17.790	1474.5	1.556	25.490	0.650	11.115	7.225
	150.000	26.707	18.395	1630.2	1.541	25.252	0.650	6.846	4.450
	147.000	27.230	18.758	1728.7	1.532	25.107	0.650	4.638	3.015
	145.000	27.579	19.000	1796.5	1.526	25.009	0.650	11.853	7.704
	140.000	28.451	19.606	1973.7	1.511	24.759	0.650	7.289	4.738
	137.000	28.974	19.969	2085.4	1.502	24.607	0.650	4.933	3.206
	135.000	29.323	20.211	2162.2	1.496	24.503	0.650	3.738	2.430
top sec(2)	133.500	29.584	20.393	2221.0	1.491	24.425	0.650	8.793	5.716
	130.000	29.795	23.443	2584.7	1.480	24.241	0.650	0.631	0.410
bot sec(1)	129.750	29.830	23.471	2593.9	1.479	24.227	0.650	12.159	7.903
	125.000	30.670	24.138	2821.2	1.463	23.970	0.650	7.851	5.103
	122.000	31.186	24.547	2967.3	1.453	23.805	0.650	6.108	3.970
	120.000	31.545	24.832	3071.7	1.446	23.692	0.650	15.532	10.096
	115.000	32.420	25.526	3336.6	1.429	23.406	0.650	15.902	10.336
	110.000	33.295	26.220	3616.3	1.411	23.111	0.650	16.272	10.577
	105.000	34.170	26.915	3911.2	1.392	22.806	0.650	16.642	10.817
	100.000	35.045	27.609	4221.7	1.373	22.490	0.650	17.012	11.058
	95.000	35.920	28.303	4548.3	1.353	22.163	0.650	17.383	11.299
	90.000	36.795	28.997	4891.2	1.332	21.823	0.650	4.227	2.747
top sec(3)	88.800	37.005	29.164	4976.0	1.327	21.739	0.650	13.444	8.739
	85.000	37.161	36.548	6268.0	1.310	21.469	0.650	3.374	2.193
bot sec(2)	84.050	37.336	36.722	6357.7	1.306	21.401	0.650	14.535	9.448
	80.000	38.036	37.416	6725.1	1.288	21.101	0.650	18.278	11.881
	75.000	38.911	38.284	7204.0	1.264	20.715	0.650	18.648	12.121
	70.000	39.786	39.151	7705.0	1.240	20.311	0.650	19.018	12.362
	65.000	40.661	40.019	8228.8	1.214	19.885	0.650	19.389	12.603
	60.000	41.536	40.887	8775.8	1.186	19.436	0.650	19.759	12.843
	55.000	42.411	41.755	9346.5	1.157	18.959	0.650	20.129	13.084
	50.000	43.286	42.623	9941.5	1.126	18.449	0.650	20.499	13.324
top sec(4)	45.000	44.161	43.490	10561.1	1.093	17.902	0.650	20.737	13.479
	40.000	44.411	52.412	12837.0	1.057	17.310	0.650	3.123	2.030
bot sec(3)	39.250	44.542	52.568	12952.1	1.051	17.216	0.650	17.852	11.604
	35.000	45.286	53.453	13617.3	1.017	16.662	0.650	21.345	13.874
	30.000	46.161	54.494	14428.7	1.000	16.384	0.650	21.715	14.115
	25.000	47.036	55.536	15271.7	1.000	16.384	0.650	22.086	14.356
	20.000	47.910	56.577	16146.9	1.000	16.384	0.650	22.456	14.596
	15.000	48.785	57.618	17055.0	1.000	16.384	0.650	22.826	14.837
	10.000	49.660	58.660	17996.4	1.000	16.384	0.650	23.196	15.077
	5.000	50.535	59.701	18971.9	1.000	16.384	0.650	23.566	15.318
base	0.000	51.410	60.742	19982.0					

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:80 MPH Without Radial Ice.
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Analysis Results:

Pole Elemt No.	Segment Feature Location	Segment Elev. (ft)	Linear Deflec. (in)	Non-Lin Deflec. (in)	Lin. Rotat. (deg.)	Non-Lin. Rotat. (deg.)
46.	top	177.000	188.209	201.827	8.98	9.67
45.		175.000	184.449	197.778	8.97	9.66
44.		170.000	175.060	187.668	8.95	9.64
43.		168.000	171.311	183.631	8.94	9.63
42.		165.000	165.700	177.590	8.92	9.60
41.		160.000	156.396	167.573	8.85	9.53
40.		157.000	150.853	161.604	8.80	9.47
39.		155.000	147.177	157.647	8.76	9.43
38.		150.000	138.070	147.844	8.63	9.29
37.		147.000	132.675	142.037	8.54	9.19
36.		145.000	129.111	138.201	8.48	9.12
35.		140.000	120.330	128.753	8.29	8.92
34.		137.000	115.162	123.194	8.16	8.78
33.		135.000	111.762	119.537	8.07	8.68
32.	top sec(2)	133.500	109.237	116.822	8.00	8.60
31.		130.000	103.435	110.582	7.83	8.41
30.	bot sec(1)	129.750	103.025	110.142	7.81	8.40
29.		125.000	95.367	101.911	7.57	8.14
28.		122.000	90.656	96.850	7.42	7.97
27.		120.000	87.572	93.537	7.31	7.85
26.		115.000	80.070	85.481	7.01	7.53
25.		110.000	72.885	77.771	6.70	7.19
24.		105.000	66.036	70.425	6.37	6.83
23.		100.000	59.538	63.459	6.03	6.46
22.		95.000	53.402	56.887	5.68	6.08
21.		90.000	47.639	50.719	5.32	5.69
20.	top sec(3)	88.800	46.312	49.299	5.24	5.60
19.		85.000	42.253	44.960	4.96	5.30
18.	bot sec(2)	84.050	41.272	43.911	4.90	5.24
17.		80.000	37.219	39.580	4.65	4.97
16.		75.000	32.508	34.551	4.34	4.63
15.		70.000	28.128	29.877	4.02	4.29
14.		65.000	24.079	25.561	3.71	3.95
13.		60.000	20.362	21.601	3.39	3.61
12.		55.000	16.977	17.999	3.07	3.27
11.		50.000	13.925	14.754	2.75	2.93
10.	top sec(4)	45.000	11.204	11.863	2.44	2.59
9.		40.000	8.813	9.326	2.12	2.25
8.	bot sec(3)	39.250	8.483	8.976	2.08	2.21
7.		35.000	6.730	7.117	1.85	1.96
6.		30.000	4.931	5.211	1.58	1.67
5.		25.000	3.414	3.606	1.31	1.39
4.		20.000	2.179	2.300	1.04	1.10
3.		15.000	1.223	1.290	0.78	0.82
2.		10.000	0.542	0.572	0.52	0.55
1.		5.000	0.136	0.143	0.26	0.27
0.	Base	0.000	0.000	0.000	0.00	0.00

Base Reactions :	Linear	Non-Linear
Shear(Kips) :	-29.0747	-29.0747
Axial(Kips) :	42.1199	42.1199
Moment(Ft-Kips) :	-3506.1521	-3691.1099

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006
(c) 2000 FDH Engineering Inc. Raleigh, North Carolina

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Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:80 MPH Without Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Shaft Segments --- FORCES AND MOMENTS:

Load Case 1: Basic Wind Velocity = 80 MPH.

Wind Force (F=qz*Gh*[Cf*Ae+sum(Ca*Aa)]) <= 2*qz*Gh*Ag, where Ag is total area of pole.

Segment Elev. (ft)	[-----Cumulative Forces-----] Wind Forces (Kips)	Axial Forces (Kips)	[-----Moments (Ft-Kips)-----] From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment
177.00	2.7129	3.6878	0.09	0.00	0.46	0.55
175.00	2.9923	3.9544	5.30	0.22	0.95	6.46
170.00	3.1061	4.0639	18.32	2.16	2.38	22.86
168.00	5.4452	7.6283	23.52	3.17	3.42	30.11
165.00	5.7410	7.9155	37.83	5.19	5.05	48.07
160.00	5.9219	8.0928	61.68	10.05	7.98	79.71
157.00	9.1098	11.1070	75.99	13.51	10.49	99.98
155.00	9.4211	11.4149	91.66	16.06	12.19	119.90
150.00	9.6110	11.6045	130.83	23.99	16.64	171.46
147.00	12.3327	15.0240	154.34	29.31	20.04	203.70
145.00	12.6583	15.3524	175.20	33.12	22.33	230.65
140.00	12.8566	15.5544	227.34	44.27	28.21	299.82
137.00	15.3436	18.8031	258.63	51.55	32.39	342.57
135.00	15.4442	18.9067	284.20	56.67	35.18	376.05
133.50	15.6802	19.4339	303.37	60.66	37.27	401.31
130.00	15.6970	19.4716	348.11	70.80	42.34	461.25
129.75	16.0205	19.8563	351.31	71.53	42.70	465.53
125.00	16.2273	20.1048	412.02	86.91	49.65	548.58
122.00	19.1516	23.3938	450.37	97.25	54.67	602.29
120.00	19.5558	23.8222	481.47	104.45	58.01	643.93
115.00	19.9647	24.2624	559.20	124.50	66.38	750.08
110.00	20.3778	24.7144	636.94	146.58	74.67	858.19
105.00	20.7947	25.1783	714.68	170.74	82.82	968.24
100.00	21.2150	25.6539	792.41	196.97	90.81	1080.20
95.00	21.6382	26.1414	870.15	225.31	98.60	1194.06
90.00	21.7395	26.2601	947.89	255.77	106.15	1309.80
88.80	22.0606	27.1175	966.54	263.20	107.90	1337.64
85.00	22.1402	27.3325	1025.62	287.95	113.54	1427.11
84.05	22.4819	27.8434	1040.39	294.21	114.93	1449.53
80.00	22.9055	28.4873	1103.36	322.29	120.81	1546.47
75.00	23.3299	29.1461	1181.10	359.08	127.90	1668.08
70.00	23.7542	29.8196	1258.83	398.00	134.73	1791.57
65.00	24.1778	30.5079	1336.57	439.03	141.28	1916.88
60.00	24.5996	31.2109	1414.31	482.18	147.50	2043.99
55.00	25.0188	31.9287	1492.05	527.44	153.36	2172.85
50.00	25.4343	32.6612	1569.78	574.80	158.83	2303.41
45.00	25.8421	34.3084	1647.52	624.24	163.87	2435.63
40.00	25.9014	34.5561	1725.26	675.71	168.63	2569.60
39.25	26.2391	35.3227	1736.92	683.48	169.30	2589.69
35.00	26.6297	36.2410	1802.99	728.92	172.93	2704.84
30.00	27.0206	37.1770	1880.73	784.33	176.80	2841.86
25.00	27.4181	38.1308	1958.47	841.69	180.18	2980.34
20.00	27.8222	39.1022	2036.20	901.05	183.04	3120.28
15.00	28.2330	40.0884	2113.94	962.42	185.32	3261.68
10.00	28.6505	41.0953	2191.68	1025.85	187.00	3404.53
5.00	29.0747	42.1199	2269.41	1091.36	188.04	3548.82
0.00	29.0747	42.1199	2347.15	1159.00	188.40	3694.55

Antenna / Arm Loads:

Ant. Arm No.	Arm Mount Elev. (ft)	Load Applic. Elev. (ft)	Veloc. Press. [qz] (psf)	Antenna Force (lbs)	Antenna Weight (lbs)	Antenna Moment (lbs-ft)
[1]	177.000	179.000	26.56	44.89	58.00	89.77
[2]	177.000	177.000	26.48	1529.76	102.00	0.00
[3]	177.000	177.000	26.48	1029.09	1300.00	0.00

[4]	168.000	168.000	26.08	1151.83	81.00	0.00
[5]	168.000	168.000	26.08	1013.86	1300.00	0.00
[6]	157.000	157.000	25.58	2071.44	181.00	0.00
[7]	157.000	157.000	25.58	994.43	1300.00	0.00
[8]	147.000	147.000	25.11	1617.88	227.00	0.00
[9]	147.000	147.000	25.11	975.90	1300.00	0.00
[10]	137.000	137.000	24.61	1397.26	168.00	0.00
[11]	137.000	137.000	24.61	956.46	1300.00	0.00
[12]	122.000	122.000	23.80	1839.31	357.00	0.00
[13]	122.000	122.000	23.80	925.29	1300.00	0.00

Total Number of Antennas / Arms = 13

06-0232E_report5MOD

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006
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Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:80 MPH Without Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Pole Shaft Segments--- ACTUAL AND ALLOWABLE STRESSES:

Load Case 1: Basic Wind Velocity = 80 MPH.

	[----------ACTUAL STRESSES----------]					Allow.	Percent	Modified
Segment Elev. (ft)	Bending [fb] (ksi)	Axial [fb] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined Stess [Ftot] (ksi)	[Fb] (ksi)	Used [Ftot/Fb] %	Percent Used [Ftot/Fb] %
177	0.081	0.244	0.293	0.368	0.661	52.00	1.27	1.27
175	0.926	0.257	0.284	0.399	1.248	52.00	2.40	2.40
170	3.029	0.254	0.263	0.398	3.305	52.00	6.36	6.36
168	3.871	0.470	0.455	0.688	4.389	52.00	8.44	8.44
165	5.913	0.477	0.435	0.709	6.419	52.00	12.35	12.35
160	9.122	0.471	0.405	0.705	9.610	52.00	18.48	18.48
157	10.971	0.633	0.659	1.062	11.641	52.00	22.39	22.39
155	12.800	0.642	0.641	1.083	13.472	52.00	25.91	25.91
150	17.114	0.631	0.599	1.068	17.765	52.00	34.16	34.16
147	19.549	0.801	0.769	1.343	20.379	52.00	39.19	39.19
145	21.573	0.808	0.749	1.361	22.406	52.00	43.09	43.09
140	26.332	0.793	0.704	1.339	27.143	52.00	52.20	52.20
137	28.997	0.942	0.829	1.568	29.962	52.00	57.62	57.62
135	31.070	0.935	0.809	1.559	32.026	52.00	61.59	61.59
133.5	32.567	0.953	0.794	1.569	33.539	52.00	64.50	64.50
130	32.395	0.831	0.688	1.369	33.239	52.00	63.92	63.92
129.75	32.618	0.846	0.686	1.395	33.478	52.00	64.38	64.38
125	36.335	0.833	0.648	1.374	37.179	52.00	71.50	71.50
122	38.567	0.953	0.768	1.594	39.535	52.00	76.03	76.03
120	40.290	0.959	0.751	1.608	41.263	52.00	79.35	79.35
115	44.404	0.950	0.71	1.597	45.366	52.00	87.24	87.24
110	48.139	0.943	0.673	1.586	49.091	52.00	94.41	71.24
105	51.537	0.935	0.639	1.576	52.480	52.00	100.92	76.78
100	54.631	0.929	0.607	1.567	55.567	52.00	106.86	81.92
95	57.453	0.924	0.577	1.558	58.383	52.00	112.27	86.69
90	60.031	0.906	0.55	1.528	60.941	52.00	117.20	91.11
88.8	60.606	0.930	0.544	1.541	61.541	52.00	118.35	92.15
85	51.549	0.748	0.433	1.238	52.301	52.00	100.58	83.04
84.05	51.863	0.758	0.429	1.252	52.625	52.00	101.20	83.64
80	53.289	0.761	0.413	1.251	54.053	52.00	103.95	86.26
75	54.893	0.761	0.395	1.245	55.657	52.00	107.03	86.79
70	56.362	0.762	0.377	1.239	57.126	52.00	109.86	89.55
65	57.708	0.762	0.361	1.233	58.472	52.00	112.45	92.12
60	58.941	0.763	0.346	1.228	59.706	52.00	114.82	94.51
55	60.070	0.765	0.332	1.222	60.836	52.00	116.99	96.73
50	61.104	0.766	0.318	1.217	61.872	52.00	118.98	98.80
45	62.049	0.789	0.306	1.212	62.840	52.00	120.85	100.76
40	54.162	0.659	0.253	1.01	54.822	52.00	105.43	91.37
39.25	54.260	0.672	0.251	1.02	54.933	52.00	105.64	91.60
35	54.804	0.678	0.243	1.018	55.483	52.00	106.70	92.76
30	55.392	0.682	0.234	1.013	56.075	52.00	107.84	94.04
25	55.925	0.687	0.225	1.008	56.612	52.00	108.87	95.21
20	56.407	0.691	0.217	1.004	57.099	52.00	109.81	96.29
15	56.843	0.696	0.209	1	57.540	52.00	110.65	95.43
10	57.237	0.701	0.202	0.997	57.939	52.00	111.42	96.37
5	57.593	0.706	0.195	0.994	58.299	52.00	112.11	97.24
0	57.912	0.693	0.188	0.976	58.606	52.00	112.70	98.02

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:69.6 MPH + 0.5 Inchs Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Segment Properties: (Max Segment Length = 5 ft)

LOAD CASE 2: WIND VELOCITY = 69.6 MPH With 0.5 Inchs Radial Ice.
Design Loads per TIA/EIA-22-F Standard: Gust Factor.....Gh= 1.69
Pole DL overload Factor= 1

Per TIA/EIA Table 1: Note3: For all cross sectional shapes,
Force coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Segment Feature Location	Segment Elev. (ft)	Diam. Across Flates (in)	Cross Section Area (in^2)	Inertia (in^4)	Expos Coeff. [Kz]	Veloc. Press. [qz] (psf)	Force Coeff. [Cf]	Projected Aera Shaft Segment [Ae] (ft^2)	[Cf*Ae] (ft^2)
top	177.000	22.000	15.126	906.4	1.616	20.039	0.650	3.922	2.549
	175.000	22.349	15.368	950.6	1.611	19.974	0.650	10.063	6.541
	170.000	23.220	15.973	1067.4	1.597	19.809	0.650	4.129	2.684
	168.000	23.569	16.216	1116.7	1.592	19.742	0.650	6.303	4.097
	165.000	24.092	16.579	1193.5	1.584	19.641	0.650	10.801	7.021
	160.000	24.964	17.184	1329.0	1.570	19.469	0.650	6.658	4.327
	157.000	25.487	17.547	1415.1	1.561	19.364	0.650	4.512	2.933
	155.000	25.836	17.790	1474.5	1.556	19.293	0.650	11.538	7.500
	150.000	26.707	18.395	1630.2	1.541	19.113	0.650	7.100	4.615
	147.000	27.230	18.758	1728.7	1.532	19.003	0.650	4.807	3.125
	145.000	27.579	19.000	1796.5	1.526	18.929	0.650	12.276	7.979
	140.000	28.451	19.606	1973.7	1.511	18.740	0.650	7.543	4.903
	137.000	28.974	19.969	2085.4	1.502	18.625	0.650	5.102	3.316
	135.000	29.323	20.211	2162.2	1.496	18.547	0.650	3.865	2.513
top sec(2)	133.500	29.584	20.393	2221.0	1.491	18.487	0.650	9.089	5.908
	130.000	29.795	23.443	2584.7	1.480	18.348	0.650	0.652	0.424
bot sec(1)	129.750	29.830	23.471	2593.9	1.479	18.338	0.650	12.561	8.164
	125.000	30.670	24.138	2821.2	1.463	18.143	0.650	8.105	5.268
	122.000	31.186	24.547	2967.3	1.453	18.018	0.650	6.378	4.145
	120.000	31.545	24.832	3071.7	1.446	17.933	0.650	16.205	10.533
	115.000	32.420	25.526	3336.6	1.429	17.716	0.650	16.575	10.774
	110.000	33.295	26.220	3616.3	1.411	17.493	0.650	16.945	11.014
	105.000	34.170	26.915	3911.2	1.392	17.262	0.650	17.315	11.255
	100.000	35.045	27.609	4221.7	1.373	17.023	0.650	17.685	11.496
	95.000	35.920	28.303	4548.3	1.353	16.775	0.650	18.056	11.736
	90.000	36.795	28.997	4891.2	1.332	16.518	0.650	4.388	2.852
top sec(3)	88.800	37.005	29.164	4976.0	1.327	16.455	0.650	13.956	9.071
	85.000	37.161	36.548	6268.0	1.310	16.250	0.650	3.502	2.276
bot sec(2)	84.050	37.336	36.722	6357.7	1.306	16.198	0.650	15.081	9.802
	80.000	38.036	37.416	6725.1	1.288	15.971	0.650	18.951	12.318
	75.000	38.911	38.284	7204.0	1.264	15.679	0.650	19.321	12.559
	70.000	39.786	39.151	7705.0	1.240	15.373	0.650	19.691	12.799
	65.000	40.661	40.019	8228.8	1.214	15.051	0.650	20.062	13.040
	60.000	41.536	40.887	8775.8	1.186	14.711	0.650	20.432	13.281
	55.000	42.411	41.755	9346.5	1.157	14.350	0.650	20.802	13.521
	50.000	43.286	42.623	9941.5	1.126	13.964	0.650	21.172	13.762
top sec(4)	45.000	44.161	43.490	10561.1	1.093	13.550	0.650	21.410	13.917
	40.000	44.411	52.412	12837.0	1.057	13.102	0.650	3.224	2.095
bot sec(3)	39.250	44.542	52.568	12952.1	1.051	13.031	0.650	18.425	11.976
	35.000	45.286	53.453	13617.3	1.017	12.611	0.650	22.018	14.312
	30.000	46.161	54.494	14428.7	1.000	12.401	0.650	22.388	14.553
	25.000	47.036	55.536	15271.7	1.000	12.401	0.650	22.759	14.793
	20.000	47.910	56.577	16146.9	1.000	12.401	0.650	23.129	15.034
	15.000	48.785	57.618	17055.0	1.000	12.401	0.650	23.499	15.274
	10.000	49.660	58.660	17996.4	1.000	12.401	0.650	23.869	15.515
	5.000	50.535	59.701	18971.9	1.000	12.401	0.650	24.239	15.756
base	0.000	51.410	60.742	19982.0					

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:69.6 MPH + 0.5 Inchs Radial Ice.
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Analysis Results:

Pole Elemt No.	Segment Feature Location	Segment Elev. (ft)	Linear Deflec. (in)	Non-Lin Deflec. (in)	Lin. Rotat. (deg.)	Non-Lin. Rotat. (deg.)
46.	top	177.000	159.344	174.156	7.62	8.38
45.		175.000	156.151	170.648	7.62	8.37
44.		170.000	148.177	161.887	7.60	8.35
43.		168.000	144.994	158.390	7.59	8.34
42.		165.000	140.229	153.156	7.57	8.32
41.		160.000	132.330	144.478	7.51	8.25
40.		157.000	127.625	139.309	7.47	8.20
39.		155.000	124.504	135.881	7.43	8.16
38.		150.000	116.775	127.393	7.32	8.04
37.		147.000	112.198	122.367	7.25	7.96
36.		145.000	109.174	119.047	7.19	7.89
35.		140.000	101.725	110.871	7.03	7.71
34.		137.000	97.342	106.061	6.92	7.59
33.		135.000	94.459	102.898	6.84	7.51
32.	top sec(2)	133.500	92.319	100.550	6.78	7.44
31.		130.000	87.399	95.155	6.63	7.27
30.	bot sec(1)	129.750	87.052	94.774	6.62	7.26
29.		125.000	80.562	87.660	6.42	7.03
28.		122.000	76.571	83.287	6.28	6.88
27.		120.000	73.958	80.426	6.19	6.78
26.		115.000	67.604	73.469	5.94	6.50
25.		110.000	61.521	66.814	5.67	6.20
24.		105.000	55.725	60.478	5.39	5.89
23.		100.000	50.228	54.473	5.10	5.57
22.		95.000	45.040	48.811	4.80	5.24
21.		90.000	40.168	43.500	4.50	4.90
20.	top sec(3)	88.800	39.047	42.278	4.42	4.82
19.		85.000	35.618	38.544	4.19	4.56
18.	bot sec(2)	84.050	34.790	37.642	4.14	4.51
17.		80.000	31.366	33.918	3.93	4.27
16.		75.000	27.390	29.596	3.66	3.98
15.		70.000	23.693	25.582	3.39	3.68
14.		65.000	20.277	21.877	3.13	3.39
13.		60.000	17.143	18.481	2.86	3.09
12.		55.000	14.290	15.393	2.59	2.80
11.		50.000	11.718	12.612	2.32	2.51
10.	top sec(4)	45.000	9.426	10.137	2.05	2.22
9.		40.000	7.413	7.966	1.79	1.93
8.	bot sec(3)	39.250	7.135	7.666	1.75	1.89
7.		35.000	5.659	6.077	1.56	1.68
6.		30.000	4.145	4.447	1.33	1.43
5.		25.000	2.870	3.077	1.10	1.19
4.		20.000	1.831	1.962	0.88	0.94
3.		15.000	1.027	1.100	0.66	0.70
2.		10.000	0.456	0.487	0.43	0.47
1.		5.000	0.114	0.122	0.22	0.23
0.	Base	0.000	0.000	0.000	0.00	0.00

Base Reactions :	Linear	Non-Linear
Shear(Kips) :	-24.0633	-24.0633
Axial(Kips) :	49.0073	49.0073
Moment(Ft-Kips) :	-2944.0444	-3143.1770

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:69.6 MPH + 0.5 Inchs Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Shaft Segments --- FORCES AND MOMENTS:

Load Case 2: Wind Velocity = 69.6 MPH With 0.5 Inchs Radial Ice.

Wind Force (F=qz*Gh*[Cf*Ae+sum(Ca*Aa)]) <= 2*qz*Gh*Ag, where Ag is total area of pole.

Segment Elev. (ft)	[-----Cumulative Forces-----] Wind Forces (Kips)	Axial Forces (Kips)	[-----Moments (Ft-Kips)-----] From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment
177.00	2.3859	4.1978	0.08	0.00	0.52	0.59
175.00	2.6067	4.5362	4.68	0.17	1.07	5.92
170.00	2.6966	4.6752	16.17	1.71	2.67	20.55
168.00	4.7207	8.6237	20.77	2.50	3.80	27.08
165.00	4.9538	8.9881	33.34	4.10	5.58	43.02
160.00	5.0961	9.2130	54.27	7.94	8.78	70.98
157.00	7.7935	12.7226	66.83	10.66	11.53	89.02
155.00	8.0380	13.1130	80.41	12.67	13.39	106.47
150.00	8.1871	13.3535	114.35	18.92	18.26	151.53
147.00	10.5570	17.3354	134.72	23.12	22.02	179.85
145.00	10.8123	17.7518	152.83	26.12	24.55	203.49
140.00	10.9676	18.0079	198.12	34.89	31.02	264.03
137.00	13.1119	21.8202	225.30	40.62	35.66	301.57
135.00	13.1907	21.9516	247.49	44.64	38.75	330.88
133.50	13.3753	22.5435	264.14	47.78	41.06	352.98
130.00	13.3884	22.5858	302.98	55.75	46.63	405.37
129.75	13.6414	23.0607	305.76	56.33	47.02	409.11
125.00	13.8030	23.3674	358.47	68.41	54.65	481.53
122.00	16.2897	27.1728	391.76	76.52	60.15	528.44
120.00	16.6089	27.7014	418.68	82.19	63.80	564.67
115.00	16.9314	28.2445	485.97	97.94	72.95	656.86
110.00	17.2571	28.8022	553.27	115.30	81.98	750.55
105.00	17.5854	29.3743	620.56	134.30	90.86	845.71
100.00	17.9161	29.9610	687.85	154.93	99.54	942.32
95.00	18.2488	30.5622	755.14	177.22	107.98	1040.34
90.00	18.3284	30.7086	822.43	201.17	116.16	1139.76
88.80	18.5807	31.6535	838.58	207.02	118.05	1163.65
85.00	18.6432	31.8907	889.73	226.48	124.12	1240.32
84.05	18.9115	32.4970	902.51	231.41	125.60	1259.52
80.00	19.2440	33.2613	957.02	253.49	131.90	1342.41
75.00	19.5768	34.0430	1024.31	282.42	139.46	1446.19
70.00	19.9094	34.8421	1091.60	313.01	146.74	1551.35
65.00	20.2411	35.6588	1158.90	345.27	153.69	1657.85
60.00	20.5712	36.4928	1226.19	379.18	160.28	1765.65
55.00	20.8991	37.3444	1293.48	414.74	166.48	1874.70
50.00	21.2239	38.2134	1360.77	451.95	172.25	1984.97
45.00	21.5426	39.9978	1428.06	490.77	177.56	2096.39
40.00	21.5890	40.2663	1495.36	531.19	182.52	2209.07
39.25	21.8527	41.1520	1505.45	537.29	183.21	2225.95
35.00	22.1578	42.2130	1562.65	572.97	186.99	2322.60
30.00	22.4628	43.2943	1629.94	616.46	191.00	2437.40
25.00	22.7728	44.3961	1697.23	661.49	194.49	2553.21
20.00	23.0879	45.5183	1764.52	708.06	197.43	2670.01
15.00	23.4080	46.6609	1831.82	756.21	199.78	2787.80
10.00	23.7331	47.8239	1899.11	805.95	201.51	2906.57
5.00	24.0633	49.0073	1966.40	857.33	202.57	3026.30
0.00	24.0633	49.0073	2033.69	910.35	202.94	3146.98

Antenna / Arm Loads:

Ant. Arm No.	Arm Mount Elev. (ft)	Load Applic. Elev. (ft)	Veloc. Press. [qz] (psf)	Antenna Force (lbs)	Antenna Weight (lbs)	Antenna Moment (lbs-ft)
[1]	177.000	179.000	20.10	38.73	90.00	77.46
[2]	177.000	177.000	20.04	1312.64	352.00	0.00
[3]	177.000	177.000	20.04	948.24	1500.00	0.00

[4]	168.000	168.000	19.74	953.23	220.00	0.00
[5]	168.000	168.000	19.74	934.21	1500.00	0.00
[6]	157.000	157.000	19.36	1685.03	444.00	0.00
[7]	157.000	157.000	19.36	916.31	1500.00	0.00
[8]	147.000	147.000	19.00	1370.38	555.00	0.00
[9]	147.000	147.000	19.00	899.24	1500.00	0.00
[10]	137.000	137.000	18.62	1158.62	495.00	0.00
[11]	137.000	137.000	18.62	881.32	1500.00	0.00
[12]	122.000	122.000	18.02	1507.88	634.00	0.00
[13]	122.000	122.000	18.02	852.60	1500.00	0.00

Total Number of Antennas / Arms = 13

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 13-Feb-2006

Data File...:177'Pole\Ante.txt Job No.:06-0232E Engineer:HMR
Description :177-FT --Scoville-Hill/Harwinton, CT 3017696
Design.....:69.6 MPH + 0.5 Inchs Radial Ice
Owner.....:Global Signal
Analyzing Method: Finite Element Method

Pole Shaft Segments--- ACTUAL AND ALLOWABLE STRESSES:

Load Case 2: Wind Velocity = 69.6 MPH With 0.5 Inchs Radial Ice.

Segment Elev. (ft)	[----------ACTUAL STRESSES----------] Bending [fb] (ksi)	Axial [fb] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Allow. Stess [Fb] (ksi)	Percent Used [Ftot/Fb] %
177.00	0.088	0.278	0.256	0.323	0.580	52.00	1.12
175.00	0.848	0.295	0.248	0.348	1.194	52.00	2.30
170.00	2.724	0.293	0.230	0.346	3.034	52.00	5.84
168.00	3.482	0.532	0.394	0.596	4.052	52.00	7.79
165.00	5.291	0.542	0.377	0.612	5.858	52.00	11.27
160.00	8.123	0.536	0.351	0.607	8.674	52.00	16.68
157.00	9.769	0.725	0.562	0.908	10.524	52.00	20.24
155.00	11.367	0.737	0.546	0.924	12.128	52.00	23.32
150.00	15.125	0.726	0.511	0.909	15.868	52.00	30.51
147.00	17.261	0.924	0.658	1.150	18.209	52.00	35.02
145.00	19.033	0.934	0.641	1.162	19.988	52.00	38.44
140.00	23.188	0.919	0.602	1.142	24.122	52.00	46.39
137.00	25.527	1.093	0.708	1.340	26.638	52.00	51.23
135.00	27.338	1.086	0.691	1.332	28.441	52.00	54.69
133.50	28.646	1.105	0.679	1.338	29.767	52.00	57.24
130.00	28.470	0.963	0.588	1.167	29.445	52.00	56.62
129.75	28.664	0.983	0.586	1.188	29.658	52.00	57.04
125.00	31.894	0.968	0.554	1.168	32.871	52.00	63.21
122.00	33.838	1.107	0.654	1.356	34.957	52.00	67.23
120.00	35.330	1.116	0.639	1.366	36.457	52.00	70.11
115.00	38.885	1.106	0.605	1.354	40.001	52.00	76.92
110.00	42.101	1.098	0.573	1.343	43.207	52.00	83.09
105.00	45.015	1.091	0.544	1.333	46.113	52.00	88.68
100.00	47.658	1.085	0.517	1.323	48.748	52.00	93.75
95.00	50.057	1.080	0.492	1.314	51.142	52.00	98.35
90.00	52.238	1.059	0.468	1.288	53.301	52.00	102.50
88.80	52.723	1.085	0.463	1.298	53.812	52.00	103.49
85.00	44.802	0.873	0.369	1.043	45.678	52.00	87.84
84.05	45.065	0.885	0.366	1.053	45.952	52.00	88.37
80.00	46.257	0.889	0.352	1.051	47.149	52.00	90.67
75.00	47.591	0.889	0.336	1.045	48.483	52.00	93.24
70.00	48.805	0.890	0.321	1.038	49.697	52.00	95.57
65.00	49.910	0.891	0.308	1.033	50.803	52.00	97.70
60.00	50.914	0.893	0.295	1.027	51.809	52.00	99.63
55.00	51.827	0.894	0.283	1.021	52.723	52.00	101.39
50.00	52.656	0.897	0.271	1.016	53.554	52.00	102.99
45.00	53.407	0.920	0.260	1.010	54.328	52.00	104.48
40.00	46.562	0.768	0.215	0.842	47.332	52.00	91.02
39.25	46.639	0.783	0.214	0.850	47.423	52.00	91.20
35.00	47.059	0.790	0.207	0.847	47.850	52.00	92.02
30.00	47.508	0.794	0.199	0.842	48.304	52.00	92.89
25.00	47.910	0.799	0.192	0.838	48.710	52.00	93.67
20.00	48.267	0.805	0.185	0.833	49.073	52.00	94.37
15.00	48.585	0.810	0.178	0.829	49.395	52.00	94.99
10.00	48.866	0.815	0.172	0.826	49.682	52.00	95.54
5.00	49.113	0.821	0.166	0.822	49.934	52.00	96.03
0.00	49.329	0.807	0.160	0.808	50.136	52.00	96.42