

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

October 20, 2005

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

RE: **EM-CING-010-050928** - New Cingular Wireless PCS, LLC. notice of intent to modify an existing telecommunications facility located at 310 Watertown Road, Bethlehem, Connecticut.

Dear Mr. Levine:

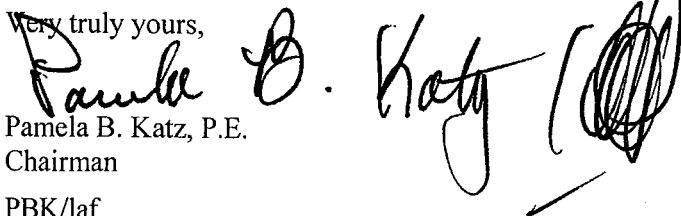
At a public meeting held on October 19, 2005, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated September 26, 2005, 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 Harry J. Traver, First Selectman, Town of Bethlehem
Jeffrey Hamel, Planning and Zoning Chairman, Town of Bethlehem
Gary Swingle, SBA Communications, Inc.
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Thomas F. Flynn III, Esq., Nextel Communications, Inc.
Christopher B. Fisher, Esq., Cuddy & Feder LLP



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www.ct.gov/csc

October 3, 2005

The Honorable Harry J. Traver
First Selectman
Town of Bethlehem
PO Box 160
Bethlehem, CT 06751-0160

RE: **EM-CING-010-050928** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 310 Watertown Road, Bethlehem, Connecticut.

Dear Mr. Traver:

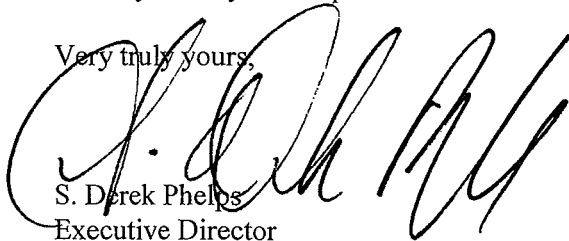
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for October 19, 2005 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 October 17, 2005.

Thank you for your cooperation and consideration.

Very truly yours,



S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

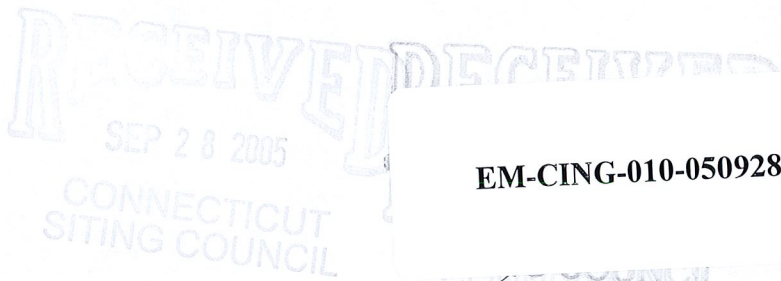
c: Jeffrey Hamel, Planning and Zoning Chairman, Town of Bethlehem

~ ORIGINAL ~



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

September 26, 2005



EM-CING-010-050928

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

**Re: Notice of Exempt Modification – Existing SBA Telecommunications Tower Facility
at 310 Watertown Road, Bethlehem, 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 Watertown Road in Bethlehem, Connecticut. 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 Bethlehem.

Existing Facility

The facility is located at 310 Watertown Road (CT Rte 63), which lies approximately 1½ miles south of East Morris along the Bethlehem-Watertown line.

The facility is owned and operated by SBA Communications Inc. (“SBA”), 5900 Broken Sound Parkway NW, Boca Raton, FL 33487 under an agreement with Gary Swingle.

The Bethlehem facility was initially approved by local P&Z authorities and was subsequently modified by Nextel with Council approval.

Proposed Modifications.

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.

The Watertown Road facility consists of a 199-foot monopole within a 57 ft x 57 ft fenced compound. The facility currently supports Sprint and Nextel communications installations.

As shown on the attached drawings and as further described below, Cingular proposes to install up to twelve Powerwave 7770 dual band panel antennas or their equivalent, approximately 55 inches in height, with antenna centerlines 165 feet above ground level on the 199-foot tower. Cingular also proposes to place an 11' 6" x 20' prefabricated concrete equipment shelter inside the existing fence 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 is structurally capable of supporting the proposed Cingular telecommunications equipment

Statutory Considerations

The changes to the Bethlehem 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 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 *	195	1962.5	11	111	0.0115	1.0000	1.15
Nextel *	185	851	9	100	0.0095	0.5673	1.67
Cingular	165	880-894	6	296	0.0235	0.5867	4.00
Cingular	165	1930-1935	3	427	0.0169	1.0000	1.69
TOTAL							8.5%

* Power density parameters from EM-NEXTEL-010-031016

† 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 8.5% 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 Bethlehem site constitute an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call Mark Appleby at (860) 513-7536 or Christopher Fisher, Esq. at (914) 761-1300 with questions concerning this notice. Thank you for your consideration in this matter.

Respectfully yours,

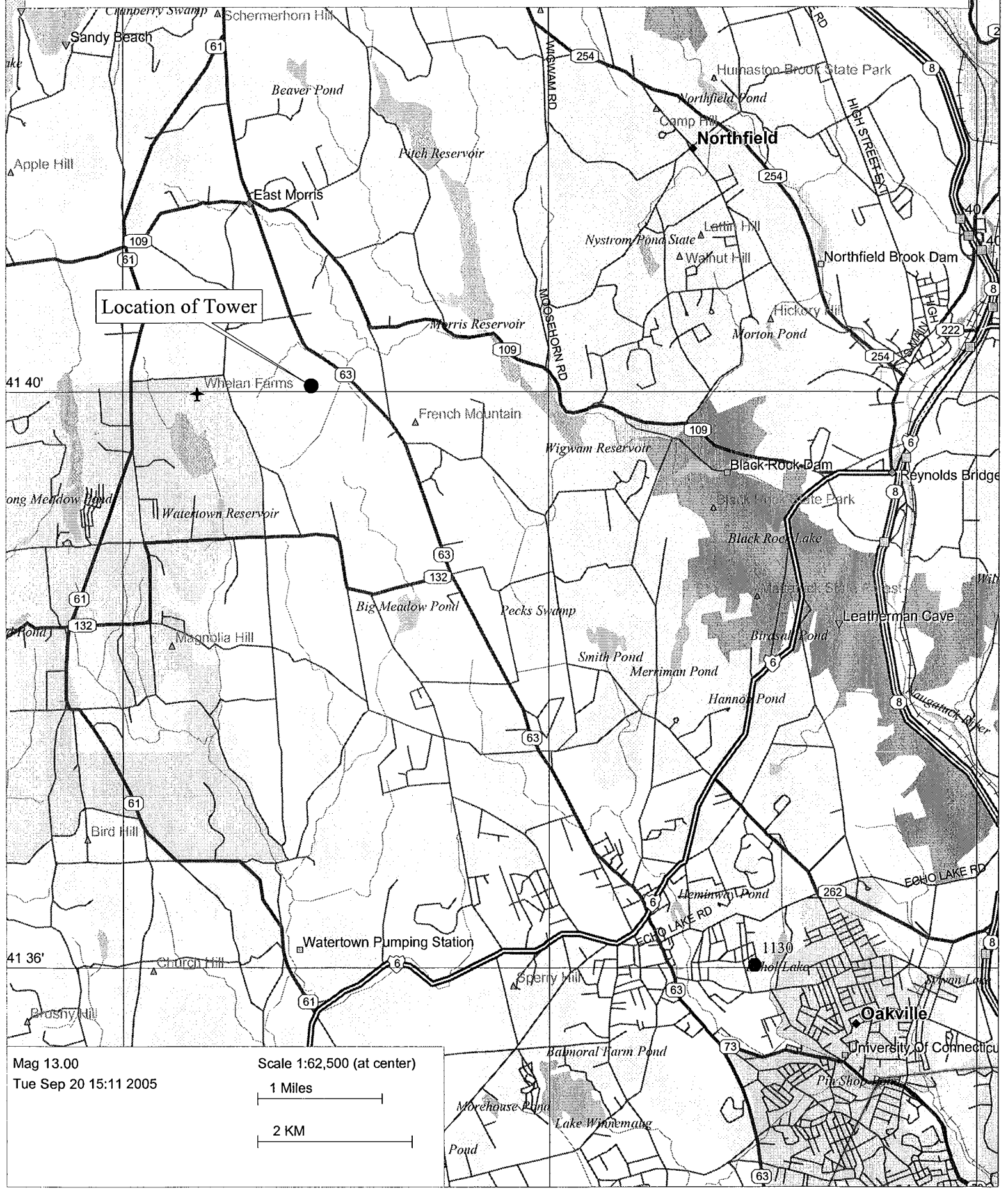


Steven Levine
Real Estate Consultant

Enclosures

cc: Honorable Harry J. Traver, 1st Selectman, Town of Bethlehem
Michele G. Briggs, Manager of Real Estate
Christopher B. Fisher, Esq.

Bethlehem - Watertown Road



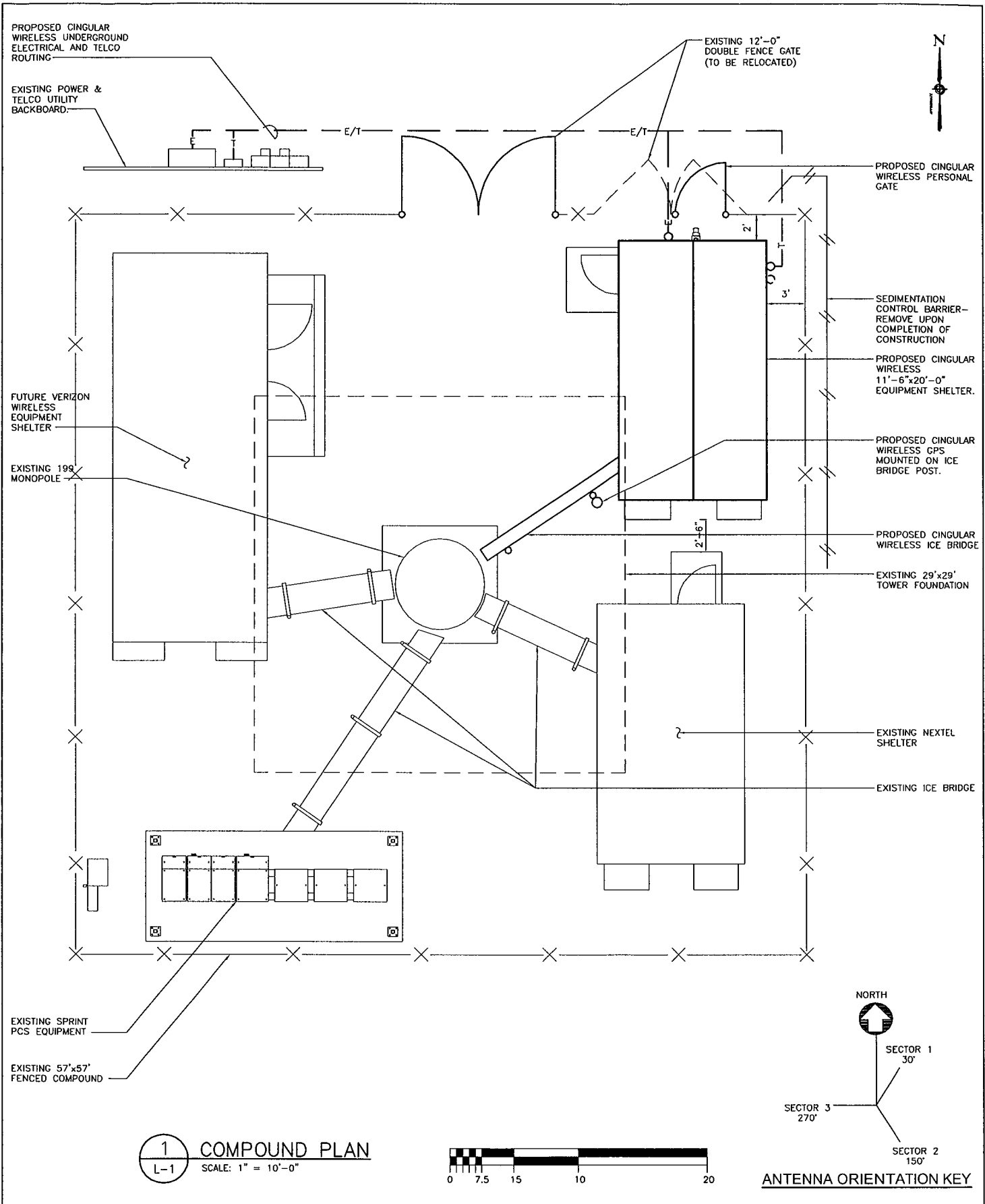
Location of Tower

41 40'

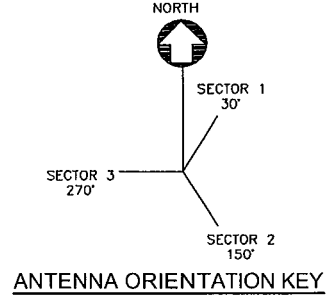
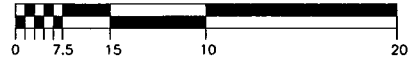
41 36'

Mag 13.00
Tue Sep 20 15:11 2005

Scale 1:62,500 (at center)
1 Miles
2 KM



1 COMPOUND PLAN
L-1 SCALE: 1" = 10'-0"



PROJECT NO.
36921770
Designed by:
Drawn by: WRB
Checked by:
Approved by:

URS CORPORATION
500 ENTERPRISE DRIVE
SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

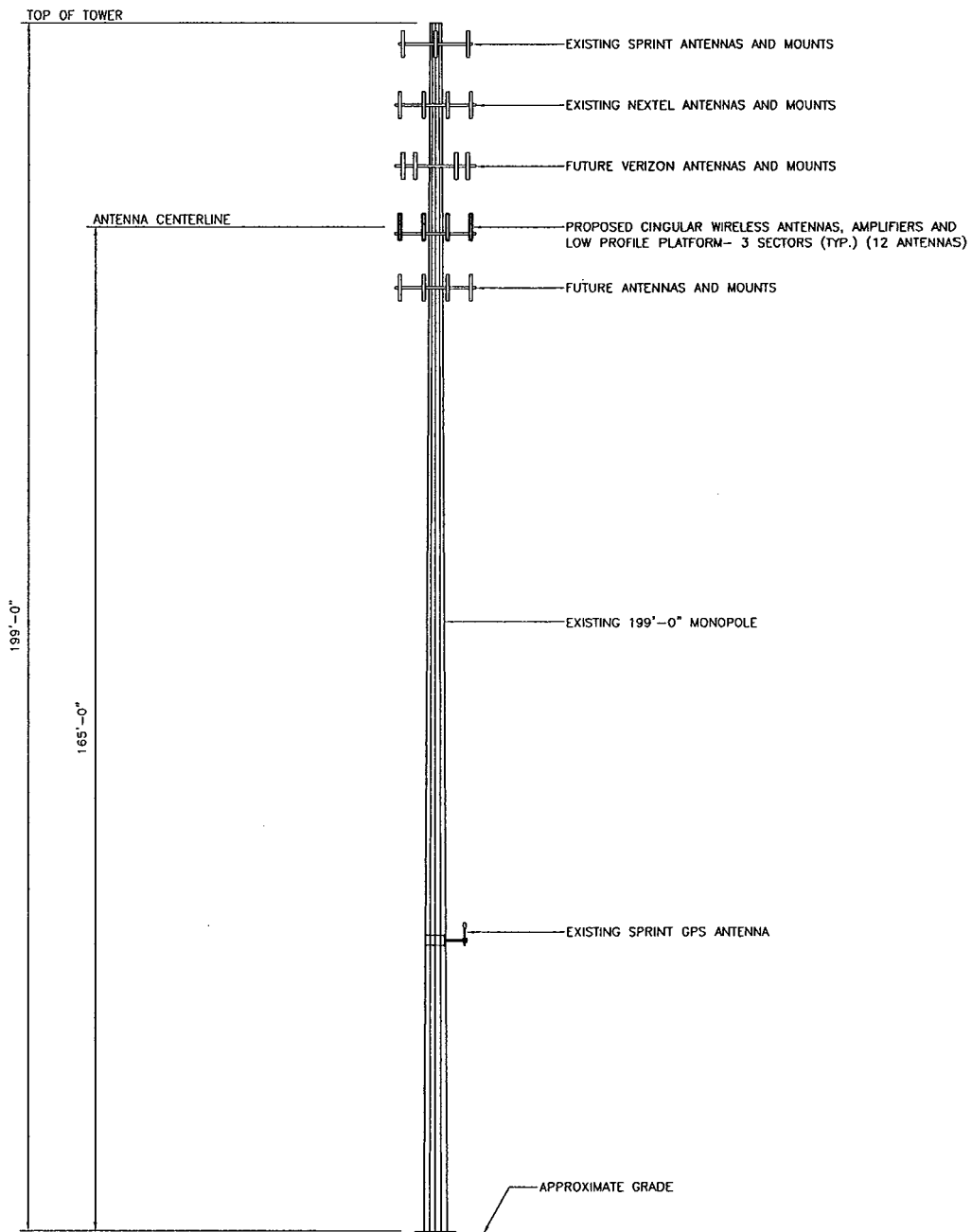
cingular
WIRELESS
WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS: 310 WATERTOWN ROAD
BETHLEHEM, CONNECTICUT

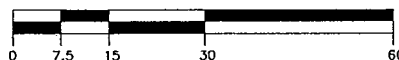
REV.	DATE:	DESCRIPTION
2	09/26/05	REVISED
1	09/20/05	REVISED

Scale: AS NOTED Date: 09-13-05
Job No. CW1 060 File No.

Dwg. No.
L-1
Dwg. 1 of 2



1 TOWER ELEVATION
L-2 SCALE: 1" = 30'-0"



PROJECT NO.
36921770

Designed by:

Drawn by:
WRB

Checked by:

Approved by:

URS CORPORATION

500 ENTERPRISE DRIVE
SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

cingular
WIRELESS

WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS:

310 WATERTOWN ROAD
BETHLEHEM, CONNECTICUT

△	09/26/05	REVISED
△	09/20/05	REVISED
REV.	DATE:	DESCRIPTION

Scale: AS NOTED Date: 09-13-05

Job No. CW1 060 File No.

Dwg. No.

L-2

Dwg. 2 of 2



September 21, 2005

Mr. Mark Luther
SBA Network Services, Inc.
800 South Washington Ave.
Scranton, PA 18505

Subject: **Structural Analysis Report**
 Cingular Co-Locate
 SBA Site Number CT-01501-S
 SBA Site Name "Morris, CT"
 195' Nudd MJ-180 Monopole Tower
 VSI Job Number 2005-007-072

Dear Mr. Luther,

Vertical Structures is pleased to provide you with the results of the structural analysis performed on the 195' tall monopole tower at SBA's Morris site in Morris, Connecticut. The purpose of the analysis was to determine the suitability of the tower upon adding twelve (12) proposed Powerwave Technologies 7770.00 panel antennas and twenty-four (24) proposed Powerwave Technologies LGP2140X tower mounted amplifiers mounted on a proposed low-profile platform at 165' for Cingular when combined with the existing and reserved equipment on the structure.

Based on our analysis we have determined the tower superstructure and foundation are sufficient to support the proposed loading.

Please, feel free to call if there are any questions. We appreciate the opportunity to provide this report and would ask that you consider Vertical Structures again on any future projects requiring material, engineering, and construction services.

Respectfully submitted,

Pankaj Taneja
Project Engineer

TABLE OF CONTENTS

Introduction	3
Analysis Criteria.....	3
Table 1 – Proposed, Existing, and Reserved Loads.....	3
Table 2 – Original Design Loads	3
Analysis Procedures.....	4
Analysis Conclusions	4
Table 3 – Tower Component Stresses vs. Capacity.....	4
Appendix A	Computer Output

Introduction

The subject tower is located in Morris, Connecticut. The 195' Nudd MJ-180 monopole tower was designed and manufactured by Fred A. Nudd Corporation in 2000. The existing structure consists of four (4) 18-sided tapered polygonal tubes joined via slip joint connections and one (1) straight pipe section joined via a bolted flange connection. The tower is founded on a 4' diameter by 12'-6" deep drilled pier embedded 8' into rock. The tower was previously reworked in accordance with o2 Wireless Solutions Job No. 2230-043 to accommodate additional loading.

Analysis Criteria

The Morris tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The proposed, existing, and reserved antennas, lines and mounts considered in this analysis are listed in Table 1. The applied forces in this study were derived from an 80 MPH basic "fastest mile" wind speed with no ice and a reduced 69 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The tower was originally designed for an 80 MPH basic "fastest mile" wind speed with no ice and a reduced 69 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The original design loads are listed in Table 2. All cables are assumed to be routed up the interior of the pole unless otherwise noted.

Table 1 – Proposed, Existing, and Reserved Loads

Elev.	Carrier	Status	Antennas	Feedlines	Mounts
195'	Sprint	Existing	(6) Decibel DB980H90E-M Panels	(6) 1 5/8" Coax	14' L.P. Platform
185'	Nextel	Existing	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	12' L.P. Platform
175'	Verizon Wireless	Reserved	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	14' L.P. Platform
165'	Cingular	Proposed	(12) Powerwave Technologies 7770.00	(24) 1 5/8" Coax	14' L.P. Platform
			(24) Powerwave Technologies LGP 2140X TMA		
155'		Future	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	14' L.P. Platform

Table 2 – Original Design Loads

Elev.	Carrier	Status	Antennas	Feedlines	Mounts
195'	Co-Lo	Design	(12) Decibel DB896 Panels	(12) 1 5/8" Coax	14' L.P. Platform
185'	Co-Lo	Design	(12) Decibel DB896 Panels	(12) 1 5/8" Coax	14' L.P. Platform
175'	Co-Lo	Design	(12) Decibel DB896 Panels	(12) 1 5/8" Coax	14' L.P. Platform
165'	Co-Lo	Design	(12) Decibel DB896 Panels	(12) 1 5/8" Coax	14' L.P. Platform
155'	Co-Lo	Design	(12) Decibel DB896 Panels	(12) 1 5/8" Coax	14' L.P. Platform

Analysis Procedures

No site visit was performed by Vertical Structures. All structural information, material specifications and foundation details were taken directly from the original Nudd tower design drawings and o2 Wireless Solutions Job No. 2230-043. Geotechnical information was taken from a report prepared by Jaworski Geotech project number 99290G. Existing, proposed and future loading information was provided by SBA.

ERI Tower (Version 3.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases.

Analysis Conclusions

The Morris tower superstructure and foundation are found to be adequate for the intended loads at the wind and ice conditions considered. Analysis results are listed in Table 3. Capacities up to 105% are considered acceptable based on the analysis procedures used.

Table 3 – Tower Component Stresses vs. Capacity

Section Number	Elevation (feet)	Combined Stress Ratio	Allowable Stress Ratio	Percent Used
1	195 – 180	0.310	1.333	23.3
2	180 – 130	1.167	1.333	87.6
3 – 4	130 – 81	1.351	1.333	101.4
5	81 – 41	1.201	1.333	90.1
6	41 – 0	1.319	1.333	99.0
Flange Bolts – Tension				59.7
Flange Plate – Bending				88.6
Anchor Bolts – Tension				94.8
Base Plate and Gussets				91.6
Foundation – Moment (comparing actual loads to design loads)				98.6



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

September 26, 2005

Honorable Harry J. Traver
1st Selectman, Town of Bethlehem
Town Hall 36 Main St. South
Bethlehem, Connecticut 06751

**Re: Notice of Exempt Modification – Existing SBA Telecommunications Tower Facility
at 310 Watertown Road, Bethlehem, Connecticut**

Dear Mr. Traver:

New Cingular Wireless PCS, LLC (“Cingular”) intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 310 Watertown Road in Bethlehem, Connecticut.

The facility is owned and operated by SBA Communications Inc. (“SBA”), 5900 Broken Sound Parkway NW, Boca Raton, FL 33487 under an agreement with Gary Swingle.

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 Bethlehem 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



September 21, 2005

Mr. Mark Luther
SBA Network Services, Inc.
800 South Washington Ave.
Scranton, PA 18505

Subject: **Structural Analysis Report**
 Cingular Co-Locate
 SBA Site Number CT-01501-S
 SBA Site Name "Morris, CT"
 195' Nudd MJ-180 Monopole Tower
 VSI Job Number 2005-007-072

EM-CING-010-050928

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Based on our analysis we have determined the tower superstructure and foundation are sufficient to support the proposed loading.

Please, feel free to call if there are any questions. We appreciate the opportunity to provide this report and would ask that you consider Vertical Structures again on any future projects requiring material, engineering, and construction services.

Respectfully submitted,

Pankaj Taneja
Project Engineer

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Introduction

The subject tower is located in Morris, Connecticut. The 195' Nudd MJ-180 monopole tower was designed and manufactured by Fred A. Nudd Corporation in 2000. The existing structure consists of four (4) 18-sided tapered polygonal tubes joined via slip joint connections and one (1) straight pipe section joined via a bolted flange connection. The tower is founded on a 4' diameter by 12'-6" deep drilled pier embedded 8' into rock. The tower was previously reworked in accordance with o2 Wireless Solutions Job No. 2230-043 to accommodate additional loading.

Analysis Criteria

The Morris tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The proposed, existing, and reserved antennas, lines and mounts considered in this analysis are listed in Table 1. The applied forces in this study were derived from an 80 MPH basic "fastest mile" wind speed with no ice and a reduced 69 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The tower was originally designed for an 80 MPH basic "fastest mile" wind speed with no ice and a reduced 69 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The original design loads are listed in Table 2. All cables are assumed to be routed up the interior of the pole unless otherwise noted.

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185'	Nextel	Existing	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	12' L.P. Platform
175'	Verizon Wireless	Reserved	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	14' L.P. Platform
165'	Cingular	Proposed	(12) Powerwave Technologies 7770.00	(24) 1 5/8" Coax	14' L.P. Platform
			(24) Powerwave Technologies LGP 2140X TMA		
155'		Future	(12) Decibel DB844H80 Panels	(12) 1 5/8" Coax	14' L.P. Platform

Table 2 – Original Design Loads

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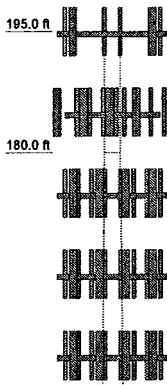
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2	180 – 130	1.167	1.333	87.6
3 – 4	130 – 81	1.351	1.333	101.4
5	81 – 41	1.201	1.333	90.1
6	41 – 0	1.319	1.333	99.0
Flange Bolts – Tension				59.7
Flange Plate – Bending				88.6
Anchor Bolts – Tension				94.8
Base Plate and Gussets				91.6
Foundation – Moment (comparing actual loads to design loads)				98.6

September 21, 2005
SBA – Morris, CT
VSI Job No. 2005-007-072

APPENDIX A

Section	1	2	3	4	5	6
Length (ft)	15.00	50.00	50.00	10.00	40.00	48.00
Number of Sides	1	18	18	18	18	18
Thickness (in)	0.2810	0.2500	0.3125	0.3125	0.3750	0.3750
Lap Splice (ft)				6.00	7.00	
Top Dia (in)	24.0000	24.0000	34.2500	44.1361	48.5250	55.1427
Bot Dia (in)	24.0000	35.8444	46.1944	48.5250	55.4556	64.5000
Grade		A36		A572-65		
Weight (lb)	1068.2	4012.7	8735.0	1519.4	8200.0	11362.4



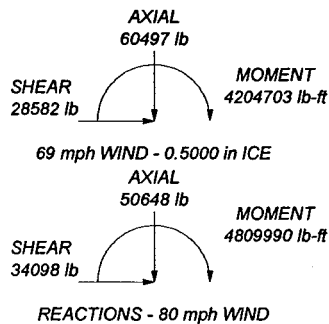
130.0 ft

85.0 ft

81.0 ft

41.0 ft

0.0 ft



APPURTENANCES

TYPE	ELEVATION	TYPE	ELEVATION
Nudd 14' Low Profile Platform (VSI) (Sprint)	195	(4) DB844H80 w/Mount Pipe (Verizon Wireless)	175
(2) DB980H90E-M w/Mount Pipe (Sprint)	195	(4) DB844H80 w/Mount Pipe (Verizon Wireless)	175
(2) DB980H90E-M w/Mount Pipe (Sprint)	195	(4) DB844H80 w/Mount Pipe (Verizon Wireless)	175
(2) DB980H90E-M w/Mount Pipe (Sprint)	195	14' Low-Profile Platform (Cingular)	165
(2) 5'x2" Antenna Mount Pipe (Sprint)	195	(4) 7770.00 w/ mount pipe (Cingular)	165
(2) 5'x2" Antenna Mount Pipe (Sprint)	195	(4) 7770.00 w/ mount pipe (Cingular)	165
(2) 5'x2" Antenna Mount Pipe (Sprint)	195	(8) LGP2140X (Cingular)	165
12' L.P. Platform (Nextel)	185	(8) LGP2140X (Cingular)	165
(4) DB844H80 w/Mount Pipe (Nextel)	185	(8) LGP2140X (Cingular)	165
(4) DB844H80 w/Mount Pipe (Nextel)	185	14' Low-Profile Platform (Future)	155
(4) DB844H80 w/Mount Pipe (Nextel)	185	(4) DB844H80 w/Mount Pipe (Future)	155
14' Low-Profile Platform (Verizon Wireless)	175	(4) DB844H80 w/Mount Pipe (Future)	155
		(4) DB844H80 w/Mount Pipe (Future)	155

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 101.4%

Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job: Morris, CT (CT-01501-S)
	Project: Vertical Structures Job #2005-007-072
	Client: SBA
	Code: TIA/EIA-222-F
	Path: \\nas1\vtaneja\Jobs Working\2005-007-072\Morris, CT\ERM\Morris.ed
Drawn by: Pankaj Taneja	App'd:
Date: 09/21/05	Scale: NTS
Dwg No. E-1	

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job Morris, CT (CT-01501-S)	Page 1 of 8
	Project Vertical Structures Job #2005-007-072	Date 17:19:29 09/21/05
	Client SBA	Designed by Pankaj Taneja

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:
Tower is located in Litchfield County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas √ SR Members Have Cut Ends Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque Include Angle Block Shear Check <li style="background-color: #cccccc;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|--|

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	195.00-180.00	15.00	0.00	Round	24.0000	24.0000	0.2810		A36 (36 ksi)
L2	180.00-130.00	50.00	5.00	18	24.0000	35.9444	0.2500	1.0000	A572-65 (65 ksi)
L3	130.00-85.00	50.00	6.00	18	34.2500	46.1944	0.3125	1.2500	A572-65 (65 ksi)
L4	85.00-81.00	10.00	0.00	18	44.1361	46.5250	0.3125	1.2500	A572-65 (65 ksi)
L5	81.00-41.00	40.00	7.00	18	46.5250	55.4556	0.3750	1.5000	A572-65 (65 ksi)
L6	41.00-0.00	48.00		18	53.1427	64.5000	0.3750	1.5000	A572-65

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job Morris, CT (CT-01501-S)	Page 2 of 8
	Project Vertical Structures Job #2005-007-072	Date 17:19:29 09/21/05
	Client SBA	Designed by Pankaj Taneja

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	

(65 ksi)

Tapered Pole Properties

Section	Tip Dia.	Area	I	r	C	I/C	J	I/Q	w	w/t
	in	in ²	in ⁴	in	in	in ³	in ⁴	in ²	in	
L1	24.0000	20.9282	1473.6284	8.3965	12.0000	122.8024	2943.2423	10.4632	0.0000	0
	24.0000	20.9282	1473.6284	8.3965	12.0000	122.8024	2943.2423	10.4632	0.0000	0
L2	24.3702	18.8456	1342.9976	8.4313	12.1920	110.1540	2687.7623	9.4246	3.7840	15.136
	36.4989	28.3235	4559.1580	12.6715	18.2598	249.6834	9124.3150	14.1644	5.8862	23.545
L3	35.9912	33.6617	4898.1536	12.0478	17.3990	281.5196	9802.7523	16.8341	5.4780	17.53
	46.9070	45.5091	12103.7119	16.2881	23.4668	515.7812	24223.3501	22.7589	7.5802	24.257
L4	46.2724	43.4675	10546.7238	15.5574	22.4211	470.3923	21107.3252	21.7379	7.2179	23.097
	47.2427	45.8370	12367.2399	16.4054	23.6347	523.2662	24750.7529	22.9229	7.6384	24.443
L5	47.2427	54.9300	14780.5555	16.3833	23.6347	625.3752	29580.5596	27.4702	7.5284	20.076
	56.3111	65.5597	25128.7929	19.5536	28.1714	891.9952	50290.6510	32.7861	9.1002	24.267
L6	55.6444	62.8068	22094.3508	18.7325	26.9965	818.4149	44217.7740	31.4094	8.6931	23.182
	65.4950	76.3248	39651.3314	22.7644	32.7660	1210.1365	79354.8371	38.1696	10.6920	28.512

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _J	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 195.00-180.00				1	1	1		
L2 180.00-130.00				1	1	1		
L3 130.00-85.00				1	1	1		
L4 85.00-81.00				1	1	1		
L5 81.00-41.00				1	1	1		
L6 41.00-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	C _A A _A	Weight
				ft		ft ² /ft	plf
LDF7-50A (1-5/8 FOAM) (Sprint)	C	No	Inside Pole	195.00 - 5.00	6	No Ice 1/2" Ice	0.00 0.82
LDF7-50A (1-5/8 FOAM) (Nextel)	C	No	Inside Pole	185.00 - 5.00	12	No Ice 1/2" Ice	0.00 0.82
LDF7-50A (1-5/8 FOAM) (Verizon Wireless)	C	No	Inside Pole	175.00 - 5.00	12	No Ice 1/2" Ice	0.00 0.82
LDF7-50A (1-5/8 FOAM) (Cingular)	C	No	Inside Pole	165.00 - 5.00	24	No Ice 1/2" Ice	0.00 0.82
LDF7-50A (1-5/8)	C	No	Inside Pole	155.00 - 5.00	12	No Ice	0.00 0.82

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job Morris, CT (CT-01501-S)	Page 3 of 8
	Project Vertical Structures Job #2005-007-072	Date 17:19:29 09/21/05
	Client SBA	Designed by Pankaj Taneja

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA} ft ² /ft	Weight plf
FOAM) (Future)						1/2" Ice 0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	195.00-180.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	123.00
L2	180.00-130.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2115.60
L3	130.00-85.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2435.40
L4	85.00-81.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	216.48
L5	81.00-41.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2164.80
L6	41.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1948.32

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	195.00-180.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	123.00
L2	180.00-130.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	2115.60
L3	130.00-85.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	2435.40
L4	85.00-81.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	216.48
L5	81.00-41.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	2164.80
L6	41.00-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B	0.500	0.000	0.000	0.000	0.000	0.00
		C	0.500	0.000	0.000	0.000	0.000	1948.32

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job	Morris, CT (CT-01501-S)	Page	4 of 8
	Project	Vertical Structures Job #2005-007-072	Date	17:19:29 09/21/05
	Client	SBA	Designed by	Pankaj Taneja

Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	<i>ft</i>	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>
L1	195.00-180.00	0.0000	0.0000	0.0000	0.0000
L2	180.00-130.00	0.0000	0.0000	0.0000	0.0000
L3	130.00-85.00	0.0000	0.0000	0.0000	0.0000
L4	85.00-81.00	0.0000	0.0000	0.0000	0.0000
L5	81.00-41.00	0.0000	0.0000	0.0000	0.0000
L6	41.00-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert <i>ft</i> <i>ft</i> <i>ft</i>	Azimuth Adjustment °	Placement <i>ft</i>	C _A A ₁ Front <i>ft</i> ²	C _A A ₂ Side <i>ft</i> ²	Weight <i>lb</i>
Nudd 14' Low Profile Platform (VSI) (Sprint)	C	None		0.0000	195.00	No Ice 32.00 1/2" Ice 42.00	No Ice 32.00 1/2" Ice 42.00	1350.00 1750.00
(2) DB980H90E-M w/Mount Pipe (Sprint)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 4.27 1/2" Ice 4.86	3.86 4.95	34.05 69.84
(2) DB980H90E-M w/Mount Pipe (Sprint)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 4.27 1/2" Ice 4.86	3.86 4.95	34.05 69.84
(2) DB980H90E-M w/Mount Pipe (Sprint)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 4.27 1/2" Ice 4.86	3.86 4.95	34.05 69.84
(2) 5'x2" Antenna Mount Pipe (Sprint)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 1.19 1/2" Ice 1.50	1.19 1.50	18.25 27.32
(2) 5'x2" Antenna Mount Pipe (Sprint)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 1.19 1/2" Ice 1.50	1.19 1.50	18.25 27.32
(2) 5'x2" Antenna Mount Pipe (Sprint)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	195.00	No Ice 1.19 1/2" Ice 1.50	1.19 1.50	18.25 27.32
12' L.P. Platform (Nextel)	C	None		0.0000	185.00	No Ice 25.00 1/2" Ice 29.00	No Ice 25.00 1/2" Ice 29.00	1700.00 2530.00
(4) DB844H80 w/Mount Pipe (Nextel)	A	From Centroid-Face	3.43 2.02 0.00	30.0000	185.00	No Ice 3.58 1/2" Ice 4.20	5.63 6.73	35.55 77.48
(4) DB844H80 w/Mount Pipe (Nextel)	B	From Centroid-Face	3.43 2.02 0.00	30.0000	185.00	No Ice 3.58 1/2" Ice 4.20	5.63 6.73	35.55 77.48
(4) DB844H80 w/Mount Pipe (Nextel)	C	From Centroid-Face	3.43 2.02 0.00	30.0000	185.00	No Ice 3.58 1/2" Ice 4.20	5.63 6.73	35.55 77.48
14' Low-Profile Platform (Verizon Wireless)	C	None		0.0000	175.00	No Ice 25.00 1/2" Ice 31.00	No Ice 25.00 1/2" Ice 31.00	1000.00 1300.00
(4) DB844H80 w/Mount Pipe (Verizon Wireless)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	175.00	No Ice 3.58 1/2" Ice 4.20	5.63 6.73	35.55 77.48

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job	Morris, CT (CT-01501-S)	Page	5 of 8
	Project	Vertical Structures Job #2005-007-072	Date	17:19:29 09/21/05
	Client	SBA	Designed by	Pankaj Taneja

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			ft ft ft	°	ft	ft ²	ft ²	lb	
(4) DB844H80 w/Mount Pipe (Verizon Wireless)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	35.55 77.48
(4) DB844H80 w/Mount Pipe (Verizon Wireless)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	35.55 77.48
14' Low-Profile Platform (Cingular)	C	None		0.0000	165.00	No Ice 1/2" Ice	25.00 31.00	25.00 31.00	1000.00 1300.00
(4) 7770.00 w/ mount pipe (Cingular)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	6.22 6.77	4.35 5.20	56.90 102.99
(4) 7770.00 w/ mount pipe (Cingular)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	6.22 6.77	4.35 5.20	56.90 102.99
(4) 7770.00 w/ mount pipe (Cingular)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	6.22 6.77	4.35 5.20	56.90 102.99
(8) LGP2140X (Cingular)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	1.23 1.38	0.37 0.48	17.50 24.46
(8) LGP2140X (Cingular)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	1.23 1.38	0.37 0.48	17.50 24.46
(8) LGP2140X (Cingular)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice	1.23 1.38	0.37 0.48	17.50 24.46
14' Low-Profile Platform (Future)	C	None		0.0000	155.00	No Ice 1/2" Ice	25.00 31.00	25.00 31.00	1000.00 1300.00
(4) DB844H80 w/Mount Pipe (Future)	A	From Centroid-Face	4.04 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	35.55 77.48
(4) DB844H80 w/Mount Pipe (Future)	B	From Centroid-Face	4.04 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	35.55 77.48
(4) DB844H80 w/Mount Pipe (Future)	C	From Centroid-Face	4.04 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	35.55 77.48

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job Morris, CT (CT-01501-S)	Page 6 of 8
	Project Vertical Structures Job #2005-007-072	Date 17:19:29 09/21/05
	Client SBA	Designed by Pankaj Taneja

Comb. No.	Description
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	195 - 180	Pole	Max Tension	5	0.07	0.08	-0.00
			Max. Compression	14	-7208.37	0.00	0.00
			Max. Mx	5	-3978.88	-73294.89	0.00
			Max. My	2	-3978.88	0.00	73294.89
			Max. Vy	5	7950.19	-73294.89	0.00
			Max. Vx	2	-7950.19	0.00	73294.89
			Max. Torque	17			0.00
L2	180 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-21063.54	0.00	0.00
			Max. Mx	5	-13097.47	-875503.79	0.00
			Max. My	2	-13097.47	0.00	875503.79
			Max. Vy	5	23618.15	-875503.79	0.00
			Max. Vx	2	-23618.15	0.00	875503.79
			Max. Torque	19			-0.02
L3	130 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-30767.91	0.00	0.00
			Max. Mx	5	-22376.63	-	0.00
							1996293.22
			Max. My	2	-22376.63	0.00	1996293.22
			Max. Vy	5	27306.79	-	0.00
							1996293.22
			Max. Vx	2	-27306.79	0.00	1996293.22
L4	85 - 81	Pole	Max. Torque	19			-0.03
			Max Tension	1	0.00	0.00	0.00

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job	Morris, CT (CT-01501-S)	Page	7 of 8
	Project	Vertical Structures Job #2005-007-072	Date	17:19:29 09/21/05
	Client	SBA	Designed by	Pankaj Taneja

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
L5	81 - 41	Pole	Max. Compression	14	-34028.32	0.00	0.00	
			Max. Mx	5	-25487.24	-	0.00	
							2274043.24	
			Max. My	2	-25487.24	0.00	2274043.24	
			Max. Vy	5	28224.50	-	0.00	
							2274043.24	
			Max. Vx	2	-28224.50	0.00	2274043.24	
			Max. Torque	19			-0.03	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	14	-43507.60	0.00	0.00	
L6	41 - 0	Pole	Max. Mx	5	-34511.74	-	0.00	
							3248529.98	
			Max. My	2	-34511.74	0.00	3248529.98	
			Max. Vy	5	30834.69	-	0.00	
							3248529.98	
			Max. Vx	2	-30834.69	0.00	3248529.98	
			Max. Torque	19			-0.03	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	14	-60496.98	0.00	0.00	
			Max. Mx	5	-50625.39	-	0.00	
L6	41 - 0	Pole				4809960.16		
			Max. My	2	-50625.39	0.00	4809960.16	
			Max. Vy	5	34131.55	-	0.00	
							4809960.16	
			Max. Vx	2	-34131.55	0.00	4809960.16	
			Max. Torque	19			-0.04	

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P/P _a
L1	195 - 180 (1)	TP24x24x0.281	15.00	0.00	0.0	21.600	20.9282	-3978.85	452050.00	0.009
L2	180 - 130 (2)	TP35.9444x24x0.25	50.00	0.00	0.0	39.000	27.3757	-13097.20	1067650.00	0.012
L3	130 - 85 (3)	TP46.1944x34.25x0.3125	50.00	0.00	0.0	39.000	44.0874	-22376.40	1719410.00	0.013
L4	85 - 81 (4)	TP46.525x44.1361x0.3125 H1-3 (1.35 CR) - 4	10.00	0.00	0.0	39.000	45.8370	-25487.10	1787640.00	0.014
L5	81 - 41 (5)	TP55.4556x46.525x0.375	40.00	0.00	0.0	39.000	63.6995	-34511.60	2484280.00	0.014
L6	41 - 0 (6)	TP64.5x53.1427x0.375	48.00	0.00	0.0	36.657	76.3248	-50625.40	2797840.00	0.018

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x lb-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} /F _{bx}	Actual M _y lb-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} /F _{by}
L1	195 - 180 (1)	TP24x24x0.281	73295.8 3	-7.162	23.760	0.301	0.00	0.000	23.760	0.000
L2	180 - 130 (2)	TP35.9444x24x0.25	875508.	-45.053	39.000	1.155	0.00	0.000	39.000	0.000

ERITower Vertical Structures, Inc. 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job Morris, CT (CT-01501-S)	Page 8 of 8
	Project Vertical Structures Job #2005-007-072	Date 17:19:29 09/21/05
	Client SBA	Designed by Pankaj Taneja

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L3	130 - 85 (3)	TP46.1944x34.25x0.3125	1996308 .33	-49.500	39.000	1.269	0.00	0.000	39.000	0.000
L4	85 - 81 (4)	TP46.525x44.1361x0.3125	2274058 .33	-52.151	39.000	1.337	0.00	0.000	39.000	0.000
L5	81 - 41 (5)	TP55.4556x46.525x0.375	3248558 .33	-46.302	39.000	1.187	0.00	0.000	39.000	0.000
L6	41 - 0 (6)	TP64.5x53.1427x0.375	4809991 .67	-47.697	36.657	1.301	0.00	0.000	36.657	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio P	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	195 - 180 (1)	TP24x24x0.281	0.009	0.301	0.000	0.310 ✓	1.333	H1-3 ✓
L2	180 - 130 (2)	TP35.9444x24x0.25	0.012	1.155	0.000	1.167 ✓	1.333	H1-3 ✓
L3	130 - 85 (3)	TP46.1944x34.25x0.3125	0.013	1.269	0.000	1.282 ✓	1.333	H1-3 ✓
L4	85 - 81 (4)	TP46.525x44.1361x0.3125	0.014	1.337	0.000	1.351 ✗	1.333	H1-3 ✗
L5	81 - 41 (5)	TP55.4556x46.525x0.375	0.014	1.187	0.000	1.201 ✓	1.333	H1-3 ✓
L6	41 - 0 (6)	TP64.5x53.1427x0.375	0.018	1.301	0.000	1.319 ✓	1.333	H1-3 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF * P_{allow}$ lb	% Capacity	Pass Fail
L1	195 - 180	Pole	TP24x24x0.281	1	-3978.85	602582.62	23.3	Pass
L2	180 - 130	Pole	TP35.9444x24x0.25	2	-13097.20	1423177.39	87.6	Pass
L3	130 - 85	Pole	TP46.1944x34.25x0.3125	3	-22376.40	2291973.43	96.2	Pass
L4	85 - 81	Pole	TP46.525x44.1361x0.3125	4	-25487.10	2382924.02	101.4	Fail ✗
L5	81 - 41	Pole	TP55.4556x46.525x0.375	5	-34511.60	3311545.10	90.1	Pass
L6	41 - 0	Pole	TP64.5x53.1427x0.375	6	-50625.40	3729520.57	99.0	Pass
Summary								
Pole (L4)							101.4	Fail ✗
RATING =							101.4	Fail ✗