



# 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](mailto:siting.council@po.state.ct.us)

Web Site: [www.state.ct.us/csc/index.htm](http://www.state.ct.us/csc/index.htm)

September 26, 2002

Peter W. van Wilgen  
Southwestern Bell Mobile Systems, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067-3900

RE: **EM-CING-025-102-104-111-130-052-148-165-020917** - Southwestern Bell Mobile Systems, LLC notice of intent to modify existing telecommunications facilities located in Cheshire, North Stonington, Norwich, Plymouth, Southbury, Unionville, Wallingford, and Windsor Locks, Connecticut.

Dear Mr. van Wilgen:

At a public meeting held on September 25, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, 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 17, 2002. 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 sites that would not increase tower heights, extend the boundaries of the tower site, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Any additional change to these facilities 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,

*MAG/rke*

Mortimer A. Gelston  
Chairman

MAG/DM/laf

c: See attached list.

List Attachment.

- c: Honorable Sandra R. Mouris, Council Chairman, Town of Cheshire  
Michael A. Milone, Town Manager, Town of Cheshire  
Richard A. Pfurr, Town Planner, Town of Cheshire  
Honorable Arline B. Whitaker, Town Council Chairman, Town of Farmington  
Jeffrey Ollendorf, Town Planner, Town of Farmington  
Honorable Nicholas H. Mullane, II, First Selectman, Town of North Stonington  
Liz Rasmussen, Senior Planning and Zoning Official, Town of North Stonington  
Honorable Arthur Lester Lathrop, Mayor, Town of Norwich  
William G. Tallman, City Manager, City of Norwich  
Peter Davis, Town Planner, City of Norwich  
Honorable Mark A.R. Cooper, First Selectman, Town of Southbury  
Mark D. Cody, Zoning Enforcement Officer, Town of Southbury  
Honorable David C. Mischke, Mayor, Town of Plymouth  
William Kuehn, Town Planner, Town of Plymouth  
Honorable William W. Dickinson, Jr., Mayor, Town of Wallingford  
Linda Bush, Town Planner, Town of Wallingford  
Honorable Edward A. Ferrari, First Selectman, Town of Windsor Locks  
Planning and Zoning Official, Town of Windsor Locks



# STATE OF CONNECTICUT

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E-Mail: [siting.council@po.state.ct.us](mailto:siting.council@po.state.ct.us)

Web Site: [www.state.ct.us/csc/index.htm](http://www.state.ct.us/csc/index.htm)

September 17, 2002

Honorable Sandra R. Mouris  
Council Chairman  
Town of Cheshire  
Town Hall  
84 South Main Street  
Cheshire, CT 06410

RE: **EM-CING-025-102-104-111-130-052-148-165-020917** - Southwestern Bell Mobile Systems, LLC notice of intent to modify existing telecommunications facilities located in Cheshire, North Stonington, Norwich, Plymouth, Southbury, Unionville, Wallingford, and Windsor Locks, Connecticut.

Dear Ms. Mouris:

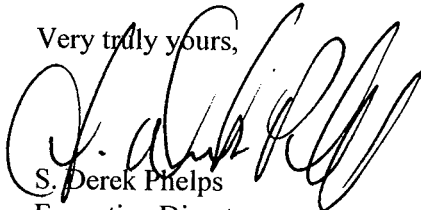
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting tentatively scheduled for September 25, 2002, at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

Please call me or inform the Council if you have any questions or comments regarding this proposal.

Thank you for your cooperation and consideration.

Very truly yours,



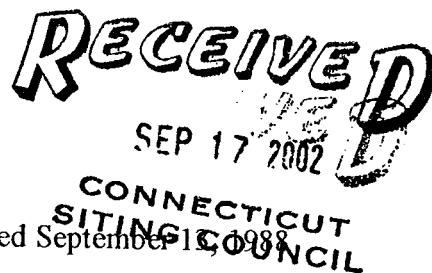
S. Derek Phelps  
Executive Director

SDP/slm

Enclosure: Notice of Intent

c: Richard A. Pfurr, Town Planner, Town of Cheshire  
Michael A. Milone, Town Manager, Town of Cheshire

**CINGULAR WIRELESS  
Antenna Modification**



**Site Address:**

751 Higgins Road, Cheshire

Notice of Intent to Modify approved September 15, 2002

**Tower Owner/Manager:**

AT&T / American Tower

**Antenna configuration**

Antenna center line – 242 ft & 257 ft

**Current and/or approved:** 6 ALP 110-11 panels (3 @ 259' and 3 @ 244')

**Planned:**

6 CSS DUO1417-8686-4-0 panels or comparable  
4 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.7% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 5.3%, or an additional 1.6% of the standard.

Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	259	880 - 894	19	100	0.0102	0.5867	1.7
Cingular	244	880 - 894	19	100	0.0115	0.5867	2.0
Total							3.7

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	257	880 - 894	16	100	0.0087	0.5867	1.5
Cingular GSM	257	880 - 894	2	296	0.0032	0.5867	0.5
Cingular GSM	257	1930 - 1935	2	427	0.0046	1.0000	0.5
Cingular TDMA	242	880 - 894	16	100	0.0098	0.5867	1.7
Cingular GSM	242	880 - 894	2	296	0.0036	0.5867	0.6
Cingular GSM	242	1930 - 1935	2	427	0.0052	1.0000	0.5
Total							5.3%

**Structural information:**

Please see attached.

**CINGULAR WIRELESS**  
**Antenna Modification**

**RECEIVED**

**Site Address:**

82 Lovely St., Farmington (Unionville)  
EM-SCLP-052-980817 approved June 7, 2000

SEP 17 2002

CONNECTICUT  
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**Tower Owner/Manager:**

SpectraSite

**Antenna configuration**

Antenna center line - 102 ft

**Current and/or approved:** 3 EMS RS90-12-00NA2 panels

**Planned:**

3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 11.2% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 15.9%, or an additional 4.7% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	102	880 - 894	19	100	0.0657	0.5867	11.2

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	102	880 - 894	16	100	0.0553	0.5867	9.4
Cingular GSM	102	880 - 894	2	296	0.0205	0.5867	3.5
Cingular GSM	102	1930 - 1935	2	427	0.0295	1.0000	3.0
<b>Total</b>							<b>15.9%</b>

**Structural information:**

Please see attached.

**CINGULAR WIRELESS**  
**Antenna Modification**

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**Site Address:**

273 Boombridge Rd, North Stonington

Tower Sharing approved January 23, 1996

**CONNECTICUT**  
**SITING COUNCIL**

**Tower Owner/Manager:**

Wireless Solutions

**Antenna configuration**

Antenna center line – 180

**Current and/or approved:** 9 ALP 110-11 panel antennas @ 175 ft

**Planned:**

6 CSS DUO1417-8686-4-0 panels or comparable  
4 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.8% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 5.1%, or an additional 1.3% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	175	880 - 894	19	100	0.0223	0.5867	3.8

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	180	880 - 894	16	100	0.0178	0.5867	3.0
Cingular GSM	180	880 - 894	2	296	0.0066	0.5867	1.1
Cingular GSM	180	1930 - 1935	2	427	0.0095	1.0000	0.9
Total							5.1%

**Structural information:**

Please see attached.

**CINGULAR WIRELESS**  
**Antenna Modification**

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SEP 17 2002

**CONNECTICUT**  
**SITING COUNCIL**

**Site Address:** 225 Rogers Road, Norwich  
Co-location approved June 9, 1988

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 154

**Current and/or approved:** 12 DB846H80-SX

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 4.9% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 7.0%, or an additional 2.1% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	154	880 - 894	19	100	0.0288	0.5867	4.9

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	154	880 - 894	16	100	0.0243	0.5867	4.1
Cingular GSM	154	880 - 894	2	296	0.0090	0.5867	1.5
Cingular GSM	154	1930 - 1935	2	427	0.0129	1.0000	1.3
<b>Total</b>							<b>7.0%</b>

**Structural information:** Please see attached.

**CINGULAR WIRELESS  
Antenna Modification**

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CONNECTICUT  
SITING COUNCIL

**Site Address:** North Street, Plymouth  
TS-SCLP-111-000515 approved May 24, 2000

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 187 ft

**Current and/or approved:** 9 Swedcom SC 9012 DIN panels

**Planned:** 9 CSS DUO1417-8686-4-0 panels or comparable  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.3% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 4.7%, or an additional 1.4% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	187	880 - 894	19	100	0.0195	0.5867	3.3

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	187	880 - 894	16	100	0.0165	0.5867	2.8
Cingular GSM	187	880 - 894	2	296	0.0061	0.5867	1.0
Cingular GSM	187	1930 - 1935	2	427	0.0088	1.0000	0.9
<b>Total</b>							<b>4.7%</b>

**Structural information:** Please see attached.



**CINGULAR WIRELESS**  
**Antenna Modification**

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CONNECTICUT  
SITING COUNCIL

**Site Address:** 133 Horse Fence Hill Rd, Southbury  
Docket 90

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 153 ft

**Current and/or approved:** 10 Swedcom 110-11 panels

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 5.0% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 7.1%, or an additional 2.1% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	153	880 - 894	19	100	0.0292	0.5867	5.0

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	153	880 - 894	16	100	0.0246	0.5867	4.2
Cingular GSM	153	880 - 894	2	296	0.0091	0.5867	1.5
Cingular GSM	153	1930 - 1935	2	427	0.0131	1.0000	1.3
<b>Total</b>							<b>7.1%</b>

**Structural information:** Please see attached.

**CINGULAR WIRELESS**  
**Antenna Modification**

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**Site Address:** 23 Wayne Rd., Wallingford  
Exempt mods. Approved 6/25/95 and 2/5/97

CONNECTICUT  
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**Tower Owner/Manager:** Steve Tripp

**Antenna configuration** Antenna center line -- 78 ft

**Current and/or approved:** 9 ALP 110-11 panels

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
3 tower mount amplifiers  
3 duplexers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 19.1% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 27.1%, or an additional 8% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	78	880 - 894	19	100	0.1123	0.5867	19.1

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	78	880 - 894	16	100	0.0946	0.5867	16.1
Cingular GSM	78	880 - 894	2	296	0.0350	0.5867	6.0
Cingular GSM	78	1930 - 1935	2	427	0.0505	1.0000	5.0
<b>Total</b>							<b>27.1%</b>

**Structural information:** Please see attached.

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:**

20 Spring St., Windsor Locks  
Exempt mods. Approved 6/25/95 and 2/5/99

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**Tower Owner/Manager:**

SpectraSite

**Antenna configuration**

Antenna center line – 104 ft

**CONNECTICUT  
SITING COUNCIL**

**Current and/or approved:** 9 Allgon ALP 110-11 panels

**Planned:**

9 CSS DUO4-8670 panels or comparable  
6 tower mount amplifier

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 10.8% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 15.3%, or an additional 4.5% of the standard.

**Cingular Current**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	104	880 - 894	19	100	0.0632	0.5867	10.8

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	104	880 - 894	16	100	0.0532	0.5867	9.1
Cingular GSM	104	880 - 894	2	296	0.0197	0.5867	3.4
Cingular GSM	104	1930 - 1935	2	427	0.0284	1.0000	2.8
<b>Total</b>							<b>15.3%</b>

**Structural information:**

Please see attached.



Southwestern Bell Mobile Systems, LLC  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

Peter W. van Wilgen  
Senior Manager - Construction

HAND DELIVERED

September 17, 2002

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SEP 17 2002

CONNECTICUT  
SITING COUNCIL

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

Re: Southwestern Bell Mobile Systems, LLC notice of intent to modify existing telecommunications facilities located in Cheshire, North Stonington, Norwich, Plymouth, Southbury, Unionville, Wallingford, and Windsor Locks.

Dear Mr. Gelston:

In order to accommodate technological changes, implement E-911 capability and enhance system performance, Southwestern Bell Mobile Systems, LLC ("SNET" or "Cingular Wireless"; formerly SNET Mobility, LLC) plans to modify the antenna configurations at its existing cell sites. Please accept this letter and attachments as notification, 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 and attachments is being sent to the chief elected official of each of the municipalities in which an affected cell site is located.

Attached are summary sheets detailing the planned changes, including power density calculations reflecting the change in the effect of Cingular's operations at each site. Also included is documentation of the structural sufficiency of each tower to accommodate the revised antenna configuration.

The changes to the facilities do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facilities will not be significantly changed or altered. Rather, the planned changes to the facilities fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).



Mr. Mortimer A. Gelston

August 28, 2002

Page 2

1. The height of the overall structure will be unaffected. At almost all sites, new panel antennas approximately the same size will replace those previously installed. Tower mount amplifiers, approximately 5" x 9" x 13", will be added to the platform on which the panel antennas are mounted to enhance signal reception at the cell site. In addition, the mandated provision of E-911 capability *may* require installation of one LMU ("location measurement unit"), approximately nine inches high, on either the tower, the equipment shelter, or the ice bridge. At this writing, however, it appears that the new panel antennas will serve this purpose as well. One GPS receive-only antenna will be attached to the equipment shelter at each site. None of the modifications will extend the height of the tower.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. Radio frequency power density will increase due to use of additional channels broadcasting at higher power. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, Cingular Wireless respectfully submits that the proposed changes at the referenced sites constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7730 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Peter W. van Wilgen  
Senior Manager - Construction

Enclosures

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:** 751 Higgins Road, Cheshire  
Notice of Intent to Modify approved September 13, 1988

**Tower Owner/Manager:** AT&T / American Tower

**Antenna configuration** Antenna center line – 242 ft & 257 ft

**Current and/or approved:** 6 ALP 110-11 panels (3 @ 259' and 3 @ 244')

**Planned:** 6 CSS DUO1417-8686-4-0 panels or comparable  
4 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.7% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 5.3%, or an additional 1.6% of the standard.

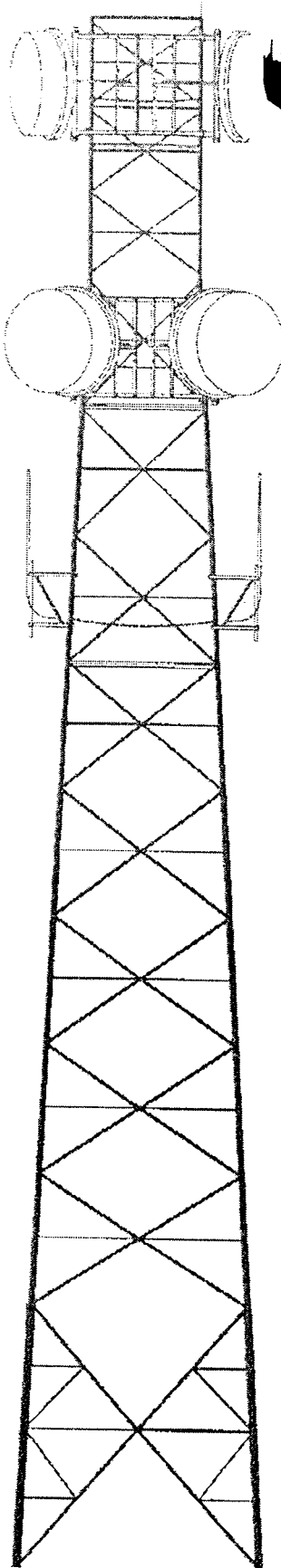
Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
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Cingular	244	880 - 894	19	100	0.0115	0.5867	2.0
Total							3.7

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	257	880 - 894	16	100	0.0087	0.5867	1.5
Cingular GSM	257	880 - 894	2	296	0.0032	0.5867	0.5
Cingular GSM	257	1930 - 1935	2	427	0.0046	1.0000	0.5
Cingular TDMA	242	880 - 894	16	100	0.0098	0.5867	1.7
Cingular GSM	242	880 - 894	2	296	0.0036	0.5867	0.6
Cingular GSM	242	1930 - 1935	2	427	0.0052	1.0000	0.5
Total							5.3%

**Structural information:** Please see attached.

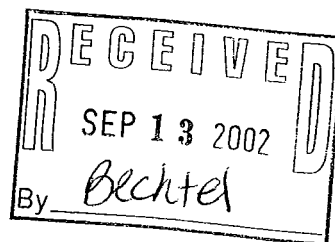


**o2 Wireless Solutions, Inc.**

**SELF SUPPORTER  
STRUCTURAL ANALYSIS REPORT**

for

**BECHTEL CORPORATION**  
175 CAPITAL BOULEVARD  
SUITE 100  
ROCKY HILL, CT 06067



**September 12, 2002**  
*Revision 1*

**SITE:**  
**Cheshire 2036**  
**New Haven County, CT**  
**250' Type "J" SS Tower**  
**Project Designer: Hachem K. Domloj**  
**o2wireless Solutions Job No. 103-3637-02**

## INTRODUCTION

This report summarizes the results of the structural analysis performed on the 250' self supported tower at the Cheshire site in New Haven County, Connecticut. The tower analysis was performed using 1999 GuyMast/Mast program.

## ANALYSIS CRITERIA

The tower was analyzed for the specified loads in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." This analysis derives its applied forces from EIA minimum 85 MPH basic wind speed with no ice accumulation and 74 MPH wind speed with 1/2" ice.

## TOWER LOADING INFORMATION

Bechtel Corporation requested o2wireless Solutions analyze the tower to verify its structural integrity under the following antenna and transmission line loading:

ELEVATION	STATUS	DESCRIPTION	LINE
TOP	EXISTING	2- ALLGON 7120-16	2- 1 5/8" COAX
TOP	EXISTING	2- GOODYEAR HORN	2- 3" CONDUIT
257'	PROPOSED	3- DUO1417-8686-4-0*	3- 1 5/8" COAX
242'	PROPOSED	3- DUO1417-8686-4-0*	3- 1 5/8" COAX
240'	EXISTING	4- ALLGON 7120-16	4- 1 5/8" COAX
225'	EXISTING	6- DB980H90	6- 1 5/8" COAX
210'	EXISTING	6- DB980H90	6- 1 5/8" COAX
210'	EXISTING	4- DAPA 58210	8- 7/8" COAX
206'	EXISTING	1- RSI PANEL	1- 1/2" COAX
200'	EXISTING	3- DB440H90	3- 1 5/8" COAX
195'	EXISTING	2- 8' WHIP	2- 7/8" COAX
180'	EXISTING	1- 8' WHIP	1- 7/8" COAX
45'	EXISTING	1- 3' YAGI	1- 1/2" COAX
38'	EXISTING	1- 3" x 6" GPS	1- 1/2" COAX
32'	EXISTING	1- 8' TV ANT.	1- 1/4" COAX

\* 2 DDD TMA 1900 to accompany the proposed antennas at levels 257' and 242'.

## AVAILABLE DOCUMENTS

- All tower data information, antenna types and locations were obtained from tower mapping.
- RF sheet.

## RESULTS

The graphs enclosed summarize the results of the tower study and itemize the structural components, specifying member function, elevation, and size. Values for allowable and actual member loads are reported along with the corresponding allowable wind conditions. The graphs summarize the existing structural components and their corresponding applied loads.



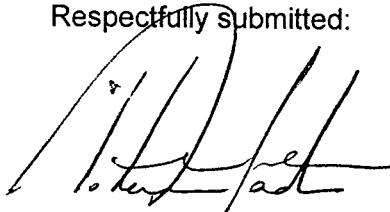
**CONCLUSIONS AND RECOMMENDATIONS:**

The Cheshire tower will support the proposed loading and meet the requirements of the EIA Standard without any further modifications required. The analysis is reflected in run M3637-02 and shown in the drawing.

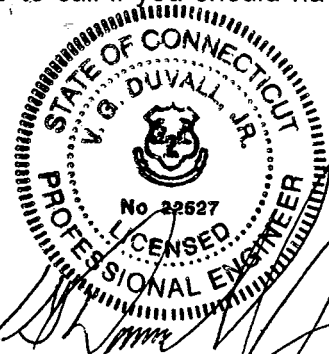
Information on the foundations and geotechnical report was not provided, thus, precluding any comments on their performance under the proposed loading criteria.

Thank you for this opportunity to work with you and do not hesitate to call if you should have any questions.

Respectfully submitted:



Hachem K. Domloj, EIT  
Project Designer



VG Duvall, Jr., PE  
Connecticut Professional Engineer



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Michael A. Milone  
Town Manager, Town of Cheshire  
Town Hall, 84 South Main St.  
Cheshire, CT 06410

Re: Telecommunications facility – 751 Higgins Road

Dear Mr. Milone:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

A handwritten signature in black ink that reads "Peter W. van Wilgen" followed by a stylized flourish and the letters "SLL".

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:** 273 Boombridge Rd, North Stonington  
Tower Sharing approved January 23, 1996

**Tower Owner/Manager:** Wireless Solutions

**Antenna configuration** Antenna center line – 180

**Current and/or approved:** 9 ALP 110-11 panel antennas @ 175 ft

**Planned:** 6 CSS DUO1417-8686-4-0 panels or comparable  
4 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.8% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 5.1%, or an additional 1.3% of the standard.

Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	175	880 - 894	19	100	0.0223	0.5867	3.8

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	180	880 - 894	16	100	0.0178	0.5867	3.0
Cingular GSM	180	880 - 894	2	296	0.0066	0.5867	1.1
Cingular GSM	180	1930 - 1935	2	427	0.0095	1.0000	0.9
<b>Total</b>							<b>5.1%</b>

**Structural information:** Please see attached.



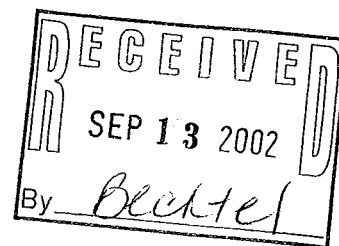
**o2 wireless Solutions**

## **GUYED TOWER STRUCTURAL ANALYSIS REPORT**

for

**BECHTEL CORPORATION**  
175 CAPITAL BOULEVARD  
SUITE 100  
ROCKY HILL, CT 06067

September 11, 2002



**SITE:**  
Pawcatuck, 2167  
New London County, CT  
180' Guyed Tower  
Project Designer: Hachem k. Domloj  
o2wireless Job No. 103-3637-13

*NORTH STONINGTON  
BOOM BRIDGE RD*

## INTRODUCTION

This report summarizes the results of the structural analysis performed on the 180' Rohn 80 guyed tower at the Pawcatuck site in New London County, Connecticut. The tower analysis was performed using 1999 GuyMast/Mast program.

## ANALYSIS CRITERIA

The tower was analyzed for the specified loads in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." This analysis derives its applied forces from EIA minimum 85 MPH basic wind speed with no ice accumulation and 74 MPH wind speed with 1/2" ice.

## TOWER LOADING INFORMATION

Bechtel Corporation requested o2wireless Solutions analyze the tower to verify its structural integrity under the following antenna and transmission line loading:

ELEVATION	STATUS	DESCRIPTION	LINE
180'	PROPOSED	6- DUO1417-8686-4-0*	6- 1 1/4" COAX
167'	EXISTING	9- ALP9011	9- 1 5/8" COAX
150'	EXISTING	9- ALP9011	9- 1 5/8" COAX
140'	EXISTING	6- ALP9011	6- 1 5/8" COAX
120'	EXISTING	3- EMS RV90-17	6- 1 1/4" COAX
110'	EXISTING	3- ALLGON 7250	6- 1 5/8" COAX

\* 4 DDD TMA 1900 to accompany the proposed antennas at level 180'.

## AVAILABLE DOCUMENTS

- All tower data information, antenna types and locations were obtained from URS Corporation previous tower analysis job number 1690476.30. o2wireless Solutions can not be held responsible for it's accuracy.
- RF sheet.

## RESULTS

The graphs enclosed summarize the results of the tower study and itemize the structural components, specifying member function, elevation, and size. Values for allowable and actual member loads are reported along with the corresponding allowable wind conditions. The graphs summarize the existing structural components and their corresponding applied loads.

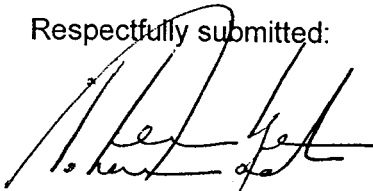
**CONCLUSIONS AND RECOMMENDATIONS:**

The Pawcatuck tower will support the proposed loading and meet the requirements of the EIA Standard without any modifications required. The analysis is reflected in run GM3637-13 and shown in the drawing pages.

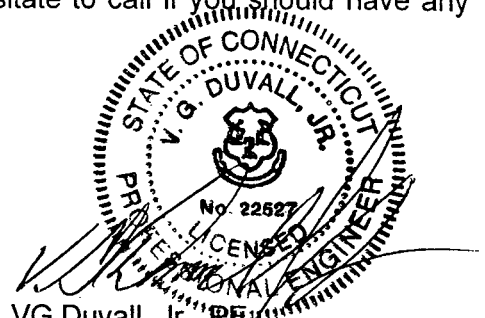
Information on the foundations and geotechnical report were not provided, thus, precluding any comments on their performance under the proposed loading criteria.

Thank you for this opportunity to work with you and do not hesitate to call if you should have any questions.

Respectfully submitted:



Hachem K. Domloj, EIT  
Project Designer



VG Duvall, Jr., PE  
Connecticut Professional Engineer



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Nicholas H. Mullane II  
1<sup>st</sup> Selectman, Town of North Stonington  
Town Hall, 40 Main St.,  
North Stonington, CT 06359

Re: Telecommunications facility – 273 Boombridge Rd.

Dear Mr. Mullane:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

A handwritten signature in black ink that reads "Peter W. van Wilgen / SLL".

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:** 225 Rogers Road, Norwich  
Co-location approved June 9, 1988

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 154

**Current and/or approved:** 12 DB846H80-SX

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 4.9% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 7.0%, or an additional 2.1% of the standard.

Cingular Current

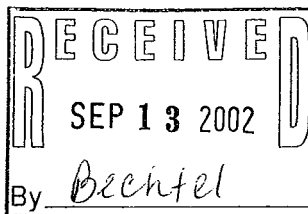
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	154	880 - 894	19	100	0.0288	0.5867	4.9

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	154	880 - 894	16	100	0.0243	0.5867	4.1
Cingular GSM	154	880 - 894	2	296	0.0090	0.5867	1.5
Cingular GSM	154	1930 - 1935	2	427	0.0129	1.0000	1.3
<b>Total</b>							<b>7.0%</b>

**Structural information:** Please see attached.





## Structural Analysis of 150' Valmont Monopole

Nrwc-Norwich, 225 Rogers Rd, Norwich, CT

#2028  
CT-0029

September 12, 2002

### 1.0 Introduction

A structural analysis was performed on the above noted tower for the addition of proposed antennas as listed below. The analysis consisted of applying the forces caused by the existing and proposed loads, and determining the resulting stresses in the structure and its foundation.

The following criteria were used in the analysis:

1. ANSI/TIA/EIA-222-F 85 mph wind [New London County], considering two loading cases:

Load Case 1. 100% wind pressure, without radial ice

Load Case 2. 75% wind pressure, with 1/2" radial ice

Information, including geometry and member sizes were obtained from Manzi Engineering analysis, dated 11/03/97.

### 2.0 Antenna and Transmission Line Loading

*Table 1. Existing and Proposed Antennas*

Elevation (Ft AGL)	Antenna	Carrier	Transmission Lines*	Notes
170	(3) EMS TRR-90-17-000DP-M21 in Canister on Platform Mount with Handrails**	Omni Point	(3) 1-1/4"	Existing
160	(1) 12' Omni on Platform Mount with Handrails**	Arch Wireless	(1) 1-1/4"	Existing
159	(1) 3 Element Yagi on Platform Mount with Handrails**	Arch Wireless	(1) 1-1/4"	Existing
154	(12) Decibel DB846H80-SX on Platform Mount with Handrails**	Cingular	(12) 7/8"	Remove Existing
154	(3) EMS MB96RR900200DPBL & (6) ADC Amplifiers on Platform Mount with Handrails**	Cingular	(3) 7/8"	Proposed Replacement
139	(2) EMS RR65-18-XXDP Flush Mounted	Nextwave	(1) Fiberoptic Cable	Existing

\* Coax installed inside the monopole.

\*\* Multiple antennas on a single platform mount.

### 3.0 Results

#### Tower Member Stress Levels

Elevation (Ft. A.G.L.)	Monopole
0-35	0.94
35-70	1.02**
70-110	1.08**
110-125	0.99
125-150	0.75

\*Maximum Stress Ratio: 1.00=Full Allowable

\*\*Overstressed; considered acceptable.

#### Foundation Stress Levels

Base Reactions	Current Analysis*
Moment (kip.ft)	1594.6
Compression (kips)	14.69
Shear (kips)	16.70

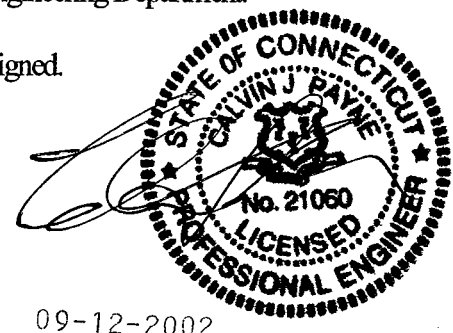
\* Foundation indeterminate; further investigation required

### 4.0 Conclusions and Recommendations

1. The tower is structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis.
2. Normal soil parameters were assumed for this foundation. SpectraSite will perform the appropriate geotechnical testing to verify the adequacy of the tower foundation.
3. Any future changes in loading must be reviewed by the SpectraSite Engineering Department.

Should any questions arise concerning this report please contact the undersigned.

Jason R. Manners, E.I.  
Engineering Associate  
919/466-4833



09-12-2002  
Calvin J. Payne, P.E.  
Chief Engineer



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Mr. William J. Tallman, City Manager  
City Hall  
100 Broadway  
Norwich, Connecticut 06360

Re: Telecommunications facility – 225 Rogers Road

Dear Mr. Tallman:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

# CINGULAR WIRELESS

## Antenna Modification

**Site Address:** North Street, Plymouth  
TS-SCLP-111-000515 approved May 24, 2000

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 187 ft

**Current and/or approved:** 9 Swedcom SC 9012 DIN panels

**Planned:** 9 CSS DUO1417-8686-4-0 panels or comparable  
6 tower mount amplifiers

### Power Density:

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 3.3% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 4.7%, or an additional 1.4% of the standard.

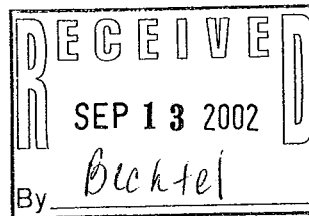
#### Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	187	880 - 894	19	100	0.0195	0.5867	3.3

#### Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	187	880 - 894	16	100	0.0165	0.5867	2.8
Cingular GSM	187	880 - 894	2	296	0.0061	0.5867	1.0
Cingular GSM	187	1930 - 1935	2	427	0.0088	1.0000	0.9
<b>Total</b>							<b>4.7%</b>

**Structural information:** Please see attached.



#1056

**Structural Analysis of 182.6' Monopole**  
Plymouth, 297 North Street, Plymouth, CT 06782

**CT-0037**  
September 12, 2002

## 1.0 Introduction

A structural analysis was performed on the above noted tower for the addition of proposed antennas as listed below. The analysis consisted of applying the forces caused by the existing and proposed loads, and determining the resulting stresses in the structure and its foundation.

The following criteria were used in the analysis:

1. ANSI/TIA/EIA-222-F, 80 mph wind [Litchfield County], considering two loading cases:

- Load Case 1. 100% wind pressure, without radial ice
- Load Case 2. 75% wind pressure, with 1/2" radial ice

Tower information, including geometry and member sizes was obtained from Smith-Cullum, Inc., steel data tower report number CT-0037 dated 5/13/01. Foundation information was obtained from SNET, job number 3C238, dated 4/24/90.

## 2.0 Antenna and Transmission Line Loading

*Table 1. Existing and Proposed Antennas*

Elevation (ft. AGL)	Antenna	Carrier	Transmission Lines*	Notes
191 187 187	(1) 10' Omni (1) Scala 12 Yagi (9) Swedcom SC 9012 DIN on Low Profile Platform Mount	Cingular	(1) 1-1/4" [I] (1) 1/2" [I] (9) 1-1/4" [I]	Remove Existing
191 187 187	(1) 10' Omni (1) Scala 12 Yagi (9) CSS DUO1417 (6) ADC Amplifier on Low Profile Platform Mount	Cingular	(1) 1-1/4" [I] (1) 1/2" [I] (9) 1-1/4" [I]	Proposed Replacement
157 148	(1) 10' Omni (1) 10' Omni on Side Arm Mounts	State PD	(2) 1-5/8" [O]	Existing
46.5	(1) Nokia CS72187.01 on Standoff Mount	Cingular	(1) 1/2" [O]	Proposed

\* [I]/[O] denotes coax installed inside/outside monopole, respectively.

### 3.0 Results

#### Monopole Stress Levels

Elevation ( <i>Fl. AGL</i> )	Combined Stress Index*
0 to 43.75	0.89
43.75 to 86.77	0.89
86.77 to 127.33	0.85
127.33 to 182.58	0.62

\*Maximum Stress Ratio: 1.00=Full Allowable.

#### Foundation Stress Levels


Base Reactions	Current Analysis	Result*
Moment ( <i>kip.ft</i> )	2357.4	<i>Satisfactory</i>
Compression ( <i>kips</i> )	23.23	<i>Satisfactory</i>
Shear ( <i>kips</i> )	22.00	<i>Satisfactory</i>

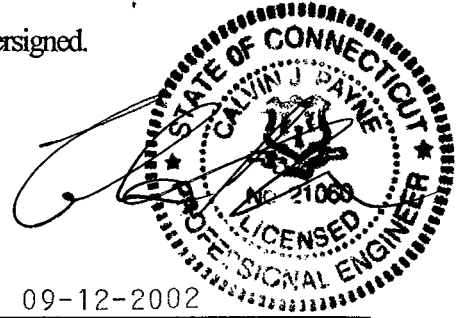
\*Based on original design reactions

### Conclusions and Recommendations

1. The tower is structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis based on a shaft steel strength of 65 ksi.
2. Steel yield strength of 65 ksi was assumed for this tower. SpectraSite will perform the appropriate material testing to verify the actual steel yield strength.
3. The foundation is structurally adequate based on *normal* soil conditions to accommodate the existing and proposed antenna and transmission line loading used in this analysis based on the TIA/EIA-222-F Standard.
4. Any future changes in loading must be reviewed by the SpectraSite Engineering Department.

Should any questions arise concerning this report please contact the undersigned.

  
Ashley Miller  
Engineering Associate  
(919) 466-5527

  
09-12-2002  
Calvin J Payne, P.E.  
Chief Engineer



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. David C. Mischke  
Mayor, Town of Plymouth  
Town Hall, 80 Main St.  
Terryville, CT 06786

Re: Telecommunications facility – North Street

Dear Mayor Mischke:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

A handwritten signature in black ink that reads "Peter W. van Wilgen" followed by a large, stylized "SLL" or "SLC" mark.

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:** 133 Horse Fence Hill Rd, Southbury  
Docket 90

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 153 ft

**Current and/or approved:** 10 Swedcom 110-11 panels

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 5.0% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 7.1%, or an additional 2.1% of the standard.

Cingular Current

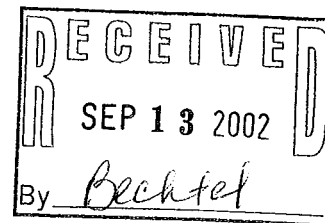
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	153	880 - 894	19	100	0.0292	0.5867	5.0

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	153	880 - 894	16	100	0.0246	0.5867	4.2
Cingular GSM	153	880 - 894	2	296	0.0091	0.5867	1.5
Cingular GSM	153	1930 - 1935	2	427	0.0131	1.0000	1.3
<b>Total</b>							<b>7.1%</b>

**Structural information:** Please see attached.





**Structural Analysis of 150' ITT Meyer Monopole**  
Southbury, 133 Horse Fence Hill Road, Southbury, CT 06488

#2126  
CT-0055  
9/10/2002

## 1.0 Introduction

A structural analysis was performed on the above noted tower for the addition of proposed antennas as listed below. The analysis consisted of applying the forces caused by the existing and proposed loads, and determining the resulting stresses in the structure and its foundation.

The following criteria were used in the analysis:

1. ANSI/TIA/EIA-222-F, **85 mph** wind [New Haven County], considering two loading cases:
  - Load Case 1. 100% wind pressure, without radial ice
  - Load Case 2. 75% wind pressure, with 1/2" radial ice

Tower information, including geometry and member sizes was obtained from Smith-Cullum Report Number CT-0055, dated 04/26/01. Foundation information was obtained from SNET Project Number 1C140, dated 11/87.

## 2.0 Antenna and Transmission Line Loading

*Table 1. Existing and Proposed Antennas*

Elevation (ft AGL)	Antenna	Carrier	Transmission Lines*	Notes
161.5	(1) Yagi	Cingular	(1) 1-1/4"	Remove Existing
159.5	(1) 9' Omni	Pagenet	(1) 1-1/4"	
153.0	(10) Swedcom ALP11011-N on Platform Mount with Handrails**	Cingular	(10) 1-1/4"	
161.5	(1) Yagi on Standoff Mount	Cingular	(1) 1-1/4"	Proposed Replacement
159.5	(1) 9' Omni on Standoff Mount	Pagenet	(1) 1-1/4"	Proposed Replacement
153.0	(3) EMS MB96RR900200DPBL (6) CSS ADC Amplifiers Flush Mounted	Cingular	(6) 1-1/4"	Proposed Replacement
114.0	(9) Allgon 7130.16.05 on T-Arm Mounts	Verizon	(9) 1-1/4"	Existing
38.5	(1) Nokia CS72187.01 on Standoff Mount	Cingular	(1) 1/2"	Proposed

\* Coax to be installed inside monopole.

\*\* Existing Platform Mount with Handrails to be removed prior to installing Proposed Cingular Loading.

### 3.0 Results

#### Monopole Stress Levels

Elevation (Ft AGL)	Combined Stress Index*
0 to 31.5	0.86
31.5 to 70	0.92
70 to 110	0.85
110 to 150	0.55

\*Maximum Stress Ratio: 1.00=Full Allowable.

#### Foundation Stress Levels

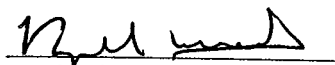
Base Reactions	Current Analysis	Result*
Moment (kip.ft)	1493.3	Satisfactory
Compression (kips)	14.3	Satisfactory
Shear (kips)	16.9	Satisfactory

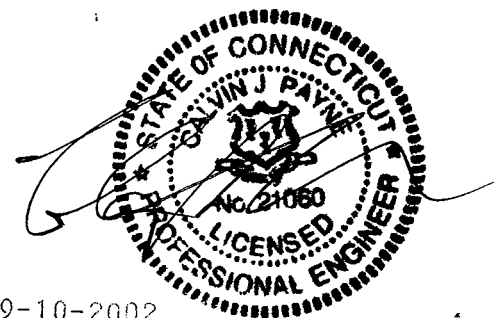
\*Based on foundation analysis.

### Conclusions and Recommendations

1. The tower, foundation, base plate and anchor bolts are structurally adequate to accommodate the proposed antenna and transmission line loading used in this analysis.
2. The flange plate at 110' is structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis.
3. Any future changes in loading must be reviewed by the SpectraSite Engineering Department.

Should any questions arise concerning this report please contact the undersigned.

  
Raphael Mohamed, P.Eng.  
Project Engineer  
919-465-6629

  
09-10-2002  
Calvin J Payne, P.E.  
Chief Engineer



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Honorable Mark A. R. Cooper  
First Selectman, Town of Southbury  
Town Hall, 501 Main Street South  
Southbury, Connecticut 06488

Re: Telecommunications facility – 133 Horse Fence Hill Road

Dear Mr. Cooper:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

A handwritten signature in cursive script that reads "Peter W. van Wilgen" followed by a large, stylized flourish that resembles the letters "SLC".

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

# CINGULAR WIRELESS

## Antenna Modification

**Site Address:** 82 Lovely St., Farmington (Unionville)  
EM-SCLP-052-980817 approved June 7, 2000

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 102 ft

**Current and/or approved:** 3 EMS RS90-12-00NA2 panels

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
6 tower mount amplifiers

### Power Density:

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 11.2% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 15.9%, or an additional 4.7% of the standard.

### Cingular Current

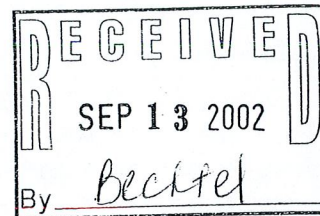
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	102	880 - 894	19	100	0.0657	0.5867	11.2

### Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	102	880 - 894	16	100	0.0553	0.5867	9.4
Cingular GSM	102	880 - 894	2	296	0.0205	0.5867	3.5
Cingular GSM	102	1930 - 1935	2	427	0.0295	1.0000	3.0
<b>Total</b>							<b>15.9%</b>

**Structural information:**

Please see attached.



RE:

#1061

CT-0040 [Unionville] (FARMINGTON)

Date: September 6, 2002

Structural Evaluation of 102' Monopole  
82 Lovely Street  
Unionville, CT 06085  
Hartford County

SpectraSite Engineering has performed a *Level 1 evaluation*<sup>1</sup> for the above-noted tower. The evaluation was based on the requirements of TIA/EIA-222-F Standards for a basic wind speed of **80 mph** without ice and 75% of the wind load with ½" radial ice.

Table 1. Existing and Proposed Antennas

ELEVATION (Ft-AGL)	ANTENNA	CARRIER	COAX *	NOTES
102	(3) EMS RS-90-12-00NA2 on Flush Mounts	Cingular	(9) 7/8"	Remove Existing
102	(3) EMS MB96RR900200DPBL (6) CSS ADC Amplifiers on Flush Mounts	Cingular	(9) 7/8"	Proposed Replacement
89	(3) Scala AP11-880/090D/XP on Flush Mounts	Nextel	(6) 7/8"	Existing
82	(3) Scala AP11-880/090D/XP on Flush Mounts	Nextel	(6) 7/8"	Existing
25.25	(1) Nokia CS72187.01 on Standoff Mount	Cingular	(1) ½"	Proposed

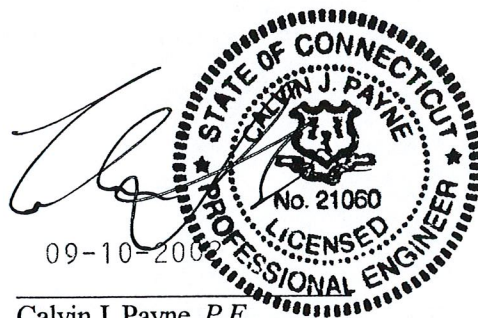
\*Coax installed inside monopole.

The subject tower, and it's foundation, are *adequate* to support the above stated loads and *in conformance* with the requirements of TIA/EIA-222-F Standard.

*The tower should be re-evaluated as future loads are added or if actual loads are found different from those mentioned in Table 1.*

Please do not hesitate to give me a call if you have any questions or concerns.

Jason R. Mannes, E.I.  
Engineering Associate  
919/466-4833



Calvin J. Payne, P.E.  
Chief Engineer

<sup>1</sup> Level 1 evaluation means:

- the applied (existing and proposed) loads (Table 1) on the tower are compared to the original design loads,
- the design wind criteria is compared to the recent code requirements.





**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Ms. Kathleen Eagen  
Town Manager, Town of Farmington  
1 Monteith Drive  
Farmington, Connecticut 06032

Re: Telecommunications facility – 82 Lovely Street, Unionville

Dear Ms. Eagen:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

# CINGULAR WIRELESS

## Antenna Modification

**Site Address:** 23 Wayne Rd., Wallingford  
Exempt mods. Approved 6/25/95 and 2/5/97

**Tower Owner/Manager:** Steve Tripp

**Antenna configuration** Antenna center line – 78 ft

**Current and/or approved:** 9 ALP 110-11 panels

**Planned:** 3 EMS MB96RR900200DPBL panels or compar.  
3 tower mount amplifiers  
3 duplexers

### Power Density:

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 19.1% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 27.1%, or an additional 8% of the standard.

#### Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	78	880 - 894	19	100	0.1123	0.5867	19.1

#### Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	78	880 - 894	16	100	0.0946	0.5867	16.1
Cingular GSM	78	880 - 894	2	296	0.0350	0.5867	6.0
Cingular GSM	78	1930 - 1935	2	427	0.0505	1.0000	5.0
<b>Total</b>							<b>27.1%</b>

**Structural information:** Please see attached.

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# DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF 80' EXISTING SELF SUPPORTING LATTICE TOWER WITH PIPE EXTENSION FOR REPLACEMENT ANTENNA ARRANGEMENT

23 Wayne Road  
Wallingford, Connecticut  
Site No.: 2168

---

*prepared for*



Cingular Wireless  
500 Enterprise Drive, Suite 3A  
Rocky Hill, CT 06067



*prepared by*



URS CORPORATION  
795 BROOK STREET, BUILDING 5  
ROCKY HILL, CT 06067  
TEL. 860-529-8882

36911712.00000

September 12, 2002



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- 2. INTRODUCTION**
- 3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS**
- 4. FINDINGS AND EVALUATION**
- 5. CONCLUSIONS**
- 6. DRAWINGS AND DATA**
  - **ERI TOWER OUTPUT DATA FOR PROPOSED ANTENNA LOADING**
  - **FOUNDATION EVALUATION**

## 1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the 80' lattice tower with a pipe extension located on 23 Wayne Road in Wallingford, Connecticut. The analysis was conducted in accordance with the TIA/EIA-222-E standard for wind velocity of 85 mph and 85 mph concurrent with 1/2" ice design wind load. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Analysis Methodology and Loading Condition Section of this report. The proposed Cingular Wireless modification is to add the antennas listed below:

(3) MB96RR900200DPBL antennas                      Cingular                      @ 78' elevation  
with (3) Duplexer and (3) TMA flush  
mounted with existing (9) 7/8" coax  
cables

The results of the analysis indicate that the tower structure is in compliance with the proposed loading conditions. The tower and its foundation are considered feasible with the TIA/EIA-222-E wind load classification specified above and all the existing and proposed antenna loading. No further analysis was conducted on the anchor bolts since the forces calculated were below the original design.

This analysis is based on:

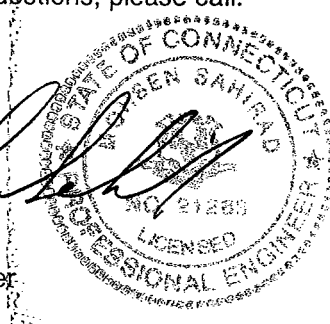
- 1) The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- 2) The tower report prepared by Pirod Incorporated engineering file no. A-111743 dated September 14, 1995.
- 3) Antenna inventory as specified in section 2 and 6 of this report.
- 4) TIA/EIA-222-E wind load classification.

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the assumption of the antenna and mount configuration. Notify the engineer in writing immediately if any of the assumptions in this report are found to be other than specified.

If you should have any questions, please call.

Sincerely,  
**URS Corporation AES**

Mohsen Sahirad, P.E.  
Senior Structural Engineer



MS/rmn

cc: Richard Johanson – Cingular Wireless  
Doug Roberts – URS  
N.A. – URS  
A.A. – URS  
CF/Book

## 2. INTRODUCTION

The subject tower is located on 23 Wayne Road in Wallingford, Connecticut. The structure is a self supporting 80' steel tapered lattice tower with a pipe extension manufactured by Pirod Incorporated.

The tower is constructed of pipe legs, diagonal rod braces and horizontal rod braces. The tower members are all bolted. The width of the tower face is 3'-6" at the top and 5'-0" at the bottom. The tower geometry and structural sizes were taken from Pirod Incorporated engineering file no. A-111743 dated September 14, 1995.

The existing structure supports several communication antennas. The antenna and mount configuration as specified below:

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Elev.(ft)</b>	<b>Cable</b>
(3) FR90-16	AT&T	Flush mounted to pipe extension	87'	(6) 1 1/4" coax
(3) MB96RR900200_PBL with (3) Duplexer and (3) TMA	Cingular (Proposed)	Flush Mounted	78'	(9) 7/8" coax
4' Dish		Mount	73'	(1) EW52
8' Whip		6' Side arm	65'	(1) 7/8" coax
7' Whip 4' Whip		6' Side arm	65'	(2) 7/8" coax
4' Dish		Mount	65'	(1) EW52
(3) PG1D0F-0093-011		(3) Side arm mount	55'	(3) 7/8" coax

The antenna inventory used in this analysis is based on URS discussions with tower owner Steve Tripp and information provided by Cingular Wireless and Bechtel.

Note: Ten unassociated cables are included in this analysis and are assumed to run the full height of the tower.

This structural analysis of the communications tower was performed by URS Corporation, AES (URS) for Cingular Wireless. The purpose of this analysis was to analyze the existing tower for its existing and proposed antenna loads. This analysis was conducted to evaluate twist (rotation), sway (deflection) and stress on the tower, and the effect of forces to the foundation of the tower resulting from existing and proposed antenna arrangements.

## 3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

### Methodology:

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

The analysis was conducted using ERI Tower 2.0. The two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA. The load combinations were investigated in ERI Tower 2.0 to determine the stress, sway and rotation.

Load Condition 1 = 85 mph Wind Load + Tower Dead Load  
Load Condition 2 = 74 mph Wind Load (with 1/2" radial ice) + Tower Dead Load

The TIA/EIA standard permits one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For purposes of this analysis, allowable stresses of tower members were increased by one-third in computing the load capacity; in addition, the appropriate "k" factors were assigned to each member.

#### 4. FINDINGS AND EVALUATION

The combined axial and bending stresses on the tower structure were evaluated to compare with the allowable stress in accordance with AISC. The analysis indicates that the tower legs, diagonal members, horizontal members and foundation have sufficient capacity to carry the loads applied. No further analysis was conducted on the tower foundation since the forces calculated were below the original design.

**The tower base reactions are as follows:**

Proposed Tower Reactions	
Compression (kips)	133
Uplift (kips)	125
Total Shear (kips)	12
Moment (kips-ft)	563

For detailed proposed tower reactions, see drawing no. E-1 in section 6 of this report.

#### 5. CONCLUSIONS

The results of the analysis indicate that the structure is in compliance with the loading conditions and the materials and member sizes for the tower. The tower is considered feasible with the TIA/EIA-222-E wind load classification specified above and all the existing and proposed antenna loading. The user of this report shall field verify the assumption of the antenna and mount configuration. Notify the engineer in writing immediately if any of the assumptions in this report are found to be other than specified.

##### **Limitations/Assumptions:**

This report is based on the following:

- A. Tower is properly installed and maintained.
- B. All members were as specified in the original Construction Documents and are in good condition.
- C. All required members are in place.
- D. All bolts are in place and are properly tightened.
- E. Tower is in plumb condition.
- F. All members protective coating is in good condition.
- G. All tower members were properly designed, detailed, fabricated, installed, and have been properly maintained since erection.

URS is not responsible for any modifications completed prior to or hereafter in which URS is not or was not directly involved. Modifications include but are not limited to:

- A. Removing/Replacing antennas
- B. Adding antennas and amplifiers

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

**Ongoing and Periodic Inspection and Maintenance by the Owner:**

1. After the Contractor has successfully completed the installation and the work has been accepted, the tower owner will be responsible for the ongoing and periodic inspection and maintenance of the tower and reinforcing system.
2. The owner shall refer to TIA/EIA-222-E, for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system is performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-E. It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Honorable William W. Dickinson, Jr.  
Mayor, Town of Wallingford  
Municipal Building, 45 South Main Street  
Wallingford, Connecticut 06492

Re: Telecommunications facility – 23 Wayne Road

Dear Mayor Dickinson:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure

**CINGULAR WIRELESS**  
**Antenna Modification**

**Site Address:** 20 Spring St., Windsor Locks  
Exempt mods. Approved 6/25/95 and 2/5/97

**Tower Owner/Manager:** SpectraSite

**Antenna configuration** Antenna center line – 104 ft

**Current and/or approved:** 9 Allgon ALP 110-11 panels

**Planned:** 9 CSS DUO4-8670 panels or comparable  
6 tower mount amplifier

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 10.8% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 15.3%, or an additional 4.5% of the standard.

**Cingular Current**

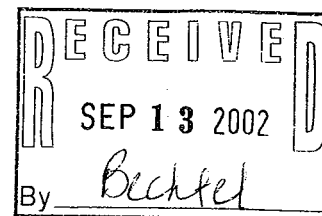
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular	104	880 - 894	19	100	0.0632	0.5867	10.8

**Cingular Planned**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Cingular TDMA	104	880 - 894	16	100	0.0532	0.5867	9.1
Cingular GSM	104	880 - 894	2	296	0.0197	0.5867	3.4
Cingular GSM	104	1930 - 1935	2	427	0.0284	1.0000	2.8
<b>Total</b>							<b>15.3%</b>

**Structural information:**

Please see attached.



## Structural Analysis of 102.88' Monopole

Windsor Locks Co., 20 Spring Street, Windsor Locks, CT 06096

CT-0046

September 11, 2002

### 1.0 Introduction

A structural analysis was performed on the above noted tower for the addition of proposed antennas as listed below. The analysis consisted of applying the forces caused by the existing and proposed loads, and determining the resulting stresses in the structure and its foundation.

The following criteria were used in the analysis:

1. ANSI/TIA/EIA-222-F, 80 mph wind [Hartford County], considering two loading cases:

- Load Case 1. 100% wind pressure, without radial ice
- Load Case 2. 75% wind pressure, with 1/2" radial ice

Tower information, including geometry, member sizes and foundation was obtained from Smith-Cullum, Inc., steel data tower report number CT-0046 dated 8/22/01. Foundation information was obtained from FDH, Inc., project number 01-1107, dated 11/14/01.

### 2.0 Antenna and Transmission Line Loading

Table 1. Existing and Proposed Antennas

Elevation (ft. A.G.L.)	Antenna	Carrier	Transmission Lines*	Notes
104	(9) CSS DU04-8670** (6) ADC Amplifiers w/ Platform Mount with Handrails	Cingular	(9) 1-1/4"	Proposed

\* Coax to be installed inside monopole.

\*\* Alternative: (9) CSS DU04-14178686-4-0



### 3.0 Results

#### Monopole Stress Levels

Elevation (Ft. A.G.L.)	Combined Stress Index*
0 to 44.82	0.61
44.82 to 102.88	0.61

\*Maximum Stress Ratio: 1.00=Full Allowable.

#### Foundation Stress Levels

Base Reactions	Current Analysis	Result*
Moment (kip.ft)	485.0	Satisfactory
Compression (kips)	9.06	Satisfactory
Shear (kips)	6.37	Satisfactory

\*Based on foundation capacity.

### Conclusions and Recommendations

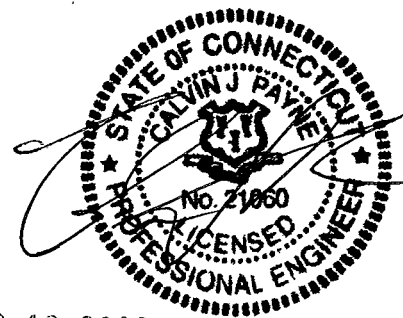
1. The tower and foundation *are structurally adequate* to accommodate the existing and proposed antenna and transmission line loading used in this analysis.
2. Steel yield strength of 65 ksi was assumed for this tower. SpectraSite will perform the appropriate material testing to verify the actual steel yield strength.
3. Any future changes in loading must be reviewed by the SpectraSite Engineering Department.

Should any questions arise concerning this report please contact the undersigned.

---

Jason R. Manners, E.I.  
Engineering Associate  
919/466-4833

09-12-2002  
Calvin J Payne, P.E.  
Chief Engineer





**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Edward A. Ferrari  
1<sup>st</sup> Selectman, Town of Windsor Locks  
Town Office Bldg., 50 Church St.  
Windsor Locks, CT 06096

Re: Telecommunications facility – 20 Spring Street

Dear Mr. Ferrari:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification 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 accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure



**Southwestern Bell Mobile Systems, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Michael A. Milone  
Town Manager, Town of Cheshire  
Town Hall, 84 South Main St.  
Cheshire, CT 06410

Re: Telecommunications facility – 751 Higgins Road

Dear Mr. Milone:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Sincerely,

A handwritten signature in black ink that reads "Peter W. van Wilgen" followed by a large, stylized flourish that resembles "SLC".

Peter W. van Wilgen  
Senior Manager – Construction

Enclosure



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500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Nicholas H. Mullane II  
1<sup>st</sup> Selectman, Town of North Stonington  
Town Hall, 40 Main St.,  
North Stonington, CT 06359

Re: Telecommunications facility – 273 Boombridge Rd.

Dear Mr. Mullane:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Senior Manager – Construction

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**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Mr. William J. Tallman, City Manager  
City Hall  
100 Broadway  
Norwich, Connecticut 06360

Re: Telecommunications facility – 225 Rogers Road

Dear Mr. Tallman:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Peter W. van Wilgen  
Senior Manager – Construction

Enclosure



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Rocky Hill, Connecticut 06067-3900  
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Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. David C. Mischke  
Mayor, Town of Plymouth  
Town Hall, 80 Main St.  
Terryville, CT 06786

Re: Telecommunications facility – North Street

Dear Mayor Mischke:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Rocky Hill, Connecticut 06067-3900  
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Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Honorable Mark A. R. Cooper  
First Selectman, Town of Southbury  
Town Hall, 501 Main Street South  
Southbury, Connecticut 06488

Re: Telecommunications facility – 133 Horse Fence Hill Road

Dear Mr. Cooper:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Enclosure



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Rocky Hill, Connecticut 06067-3900  
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Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Ms. Kathleen Eagen  
Town Manager, Town of Farmington  
1 Monteith Drive  
Farmington, Connecticut 06032

Re: Telecommunications facility – 82 Lovely Street, Unionville

Dear Ms. Eagen:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Sincerely,

Peter W. van Wilgen  
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Enclosure





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Rocky Hill, Connecticut 06067-3900  
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Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Honorable William W. Dickinson, Jr.  
Mayor, Town of Wallingford  
Municipal Building, 45 South Main Street  
Wallingford, Connecticut 06492

Re: Telecommunications facility – 23 Wayne Road

Dear Mayor Dickinson:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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Sincerely,

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Peter W. van Wilgen  
Senior Manager – Construction

Enclosure



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Rocky Hill, Connecticut 06067-3900  
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Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager - Construction*

September 17, 2002

Hon. Edward A. Ferrari  
1<sup>st</sup> Selectman, Town of Windsor Locks  
Town Office Bldg., 50 Church St.  
Windsor Locks, CT 06096

Re: Telecommunications facility – 20 Spring Street

Dear Mr. Ferrari:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. Cingular will install panel antennas, small amplifiers and a small locator unit on the tower. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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