# 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
Web Site: www.state.ct.us/csc/index.htm


August 27, 2003

Michele G. Briggs
Manager of Real Estate
Cingular Wireless
500 Enterprise Drive, 3rd Floor
Rocky Hill, CT 06067

RE: **EM-CING-132-030728** - Southwestern Bell Mobile Systems, LLC notice of intent to modify an existing telecommunications facility located at 300 Governors Street, South Windsor, Connecticut.

Dear Ms. Briggs:

At a public meeting held on August 26, 2003, 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 July 28, 2003. 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. 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: Honorable William Aman, Mayor, Town of South Windsor
Marcia Banach, Director of PlanningTown of South Windsor
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae
Christopher B. Fisher, Esq., Cuddy & Feder LP

**Southwestern Bell Mobile Systems, LLC**
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900

EM-CING-132-030728

July 28, 2003

RECEIVED
JUL 28 2003
CONNECTICUT
SITING COUNCIL

Ms. Pam Katz, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Notice of Exempt Modification – Existing T-Mobile Telecommunications Tower Facility at Governors Street, South Windsor, Connecticut**

Dear Chairman Katz:

Southwestern Bell Mobile Systems, LLC ("SBMS") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 300 Governors Street in South Windsor, 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 Town Manager of South Windsor.

The T-Mobile South Windsor facility is located on the east side of US Hwy 5, approximately 2 miles north of its intersection with I-291. Tower coordinates (NAD 83) are N 41° 49' 48" and W 72° 36' 00". The facility is owned and operated by T-Mobile USA ("T-Mobile"), with offices at 4 Sylvan Way, Parsippany, New Jersey 07054. T-Mobile leases the land from Electron Technologies Corporation of South Windsor.

SBMS, the local component of the nationwide Cingular Wireless network, is licensed by the Federal Communications Commission ("FCC") to provide cellular mobile telephone service in the Hartford, CT Metropolitan Statistical Area, which includes the area to be served by SBMS' proposed installation. The public need for cellular service has been predetermined by the FCC.

T-Mobile is in agreement with plans put forth by SBMS pursuant to mutually acceptable terms and conditions and has also authorized SBMS to obtain necessary government approvals. While the two companies have not yet concluded a final written agreement at this writing, T-Mobile has authorized SBMS to proceed with this application in expectation of

timely progress.

Attached to this Notice are a site location map, a proposed site plan, the proposed tower profile, and a structural analysis report that shows the tower is structurally capable of supporting the proposed SBMS telecommunications equipment.

The South Windsor Planning & Zoning Commission granted a Special Exception for the T-Mobile facility on September 14, 1999. The facility came under Council jurisdiction with AT&T's application to co-locate in EM-AT&T-132-020701, which was approved on August 1, 2002

The Governors Street facility consists of a 175-foot monopole within a roughly 45' x 50' notched rectangular compound surrounded by a 6-ft high chain link fence. T-Mobile operates its own antennas and telecommunications equipment at the site, and it has also leased tower and ground space to AT&T. T-Mobile has panel antennas at the top of the monopole and equipment cabinets mounted on a raised metal platform. AT&T operates antennas at the 152' level of the tower and has its equipment on a concrete pad.

As shown on the attached drawings and as further described below, SBMS proposes to install up to twelve CSS DUO4-8670 panel antennas, approximately 48 inches in height, with the center of radiation approximately 162 feet above ground level. Associated equipment to be installed on the tower are up to six ADC Co. dual-band tower top amplifiers ("TTA's"; small metal boxes approximately 26 pounds apiece) immediately behind the antennas, and up to three very small (5 pounds apiece) CSS dual-band "combiners." SBMS also proposes to install a 12' x 20' equipment building at grade beside the tower. All work will be done inside the existing fenced compound.

With the GSM-only configuration, SBMS will broadcast up to:

- 2 channels, 296 Watts ERP, 880 – 894 MHz; and
- 2 channels, 427 Watts ERP, 1930 – 1935 MHz.

**Statutory Considerations**

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

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

2. The proposed changes will not affect the property boundaries. All new construction will take place on property leased by T-Mobile and within the existing fenced compound.

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 currently 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 |
|---|---|---|---|---|---|---|---|
| T-Mobile * | 172 | 1930 - 1945 | 12 | 250 | 0.0365 | 1.0000 | 3.65 |
| Cingular GSM | 162 | 880 - 894 | 2 | 296 | 0.0081 | 0.5867 | 1.38 |
| Cingular GSM | 162 | 1930 - 1935 | 2 | 427 | 0.0117 | 1.0000 | 1.17 |
| AT&T * | 152 | D: 1945<br>E: 1985 | 12 | 250 | 0.0467 | 1.0000 | 4.67 |
| | | | | | | | |
| **Total** | | | | | | | **10.87%** |

* Power density parameters taken from AT&T's application to the Council in EM-AT&T-132-020701.

† 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 10.9 % of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from SBMS' use of the tower facility would thus be within applicable standards.

For the foregoing reasons, SBMS respectfully submits that proposed changes to implement expanded shared use at the South Windsor site constitute an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7700 with questions concerning this application. Thank you for your consideration in this matter.

Respectfully yours,

Michele G. Briggs
Manager of Real Estate

Enclosures

cc: Matthew B. Galligan, Town Manager, Town of South Windsor

T-Mobile®

Rebecca Smiley
Site Marketing Coordinator

July 17, 2003

**RE: Letter of Authorization – Collocation on T-Mobile tower.**
Property address: 300 Governors Highway, South Windsor, CT 06074

To Whom It May Concern:

Southwestern Bell Mobile Systems, LLC, a part of the Cingular Wireless System ("Cingular") is currently in negotiations with Omnipoint Communications, Inc, a subsidiary of T-Mobile USA, Inc ("T-Mobile"), to co-locate its communications equipment on the T-Mobile tower located at 300 Governors Highway, South Windsor, CT 06074.

Cingular shall be required by the terms of the agreement to seek and obtain all necessary local permits and approvals. As a duly authorized representative of T-Mobile, permission is hereby granted to Cingular, and agents thereof, for the purpose of consummating any applications necessary to gain the required approvals from the Town of South Windsor and/or the State of Connecticut.

Any fees or charges associated with all applications or permits and any conditions placed on the applicant shall be the sole responsibility of Cingular.

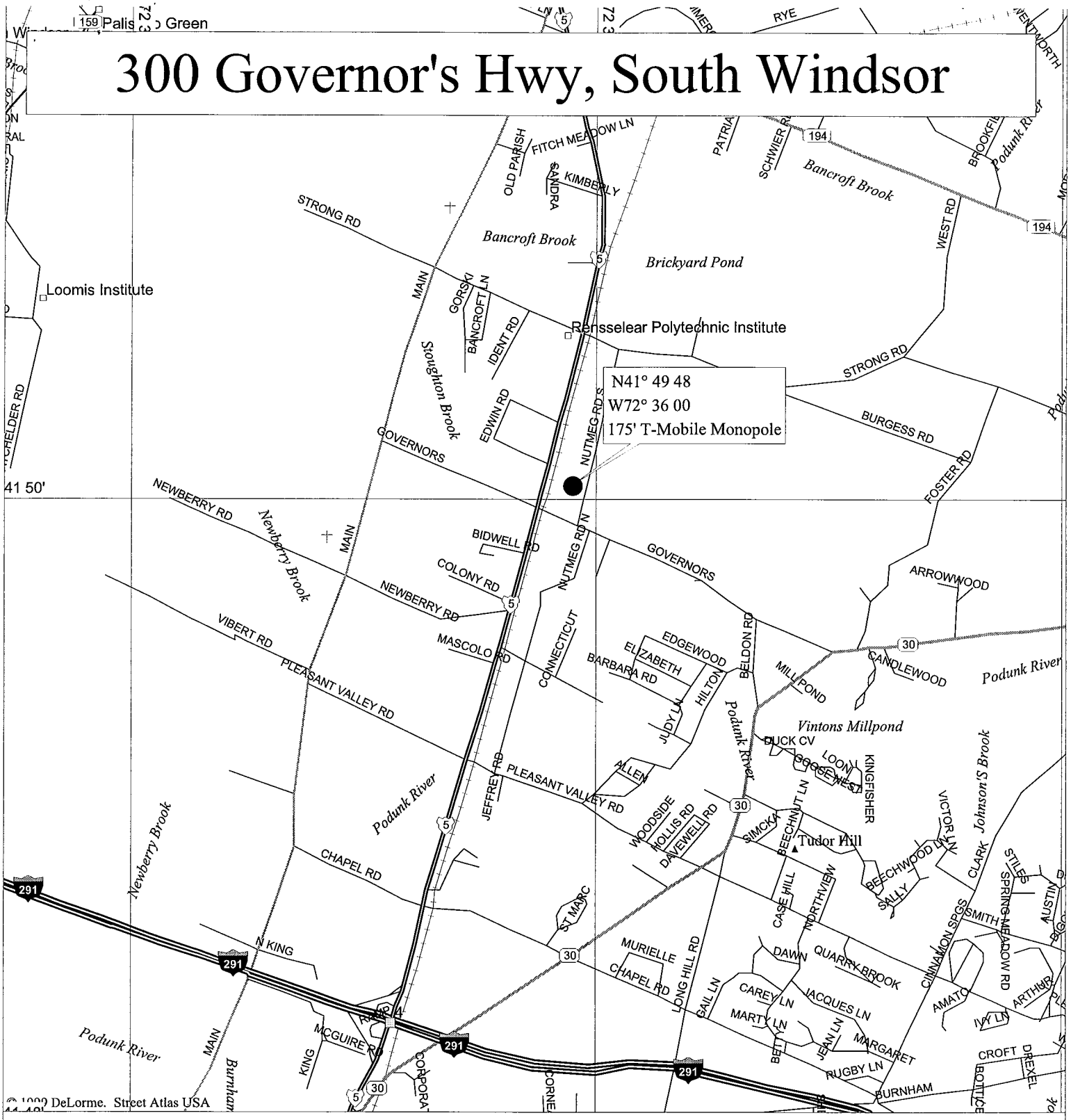
Yours truly,

Rebecca Smiley

Rebecca Smiley
Co-Location Specialist, Northeast
T-Mobile USA, Inc.
(973) 898-8588

4 Sylvan Way
Parsippany, NJ 07054

# 300 Governor's Hwy, South Windsor



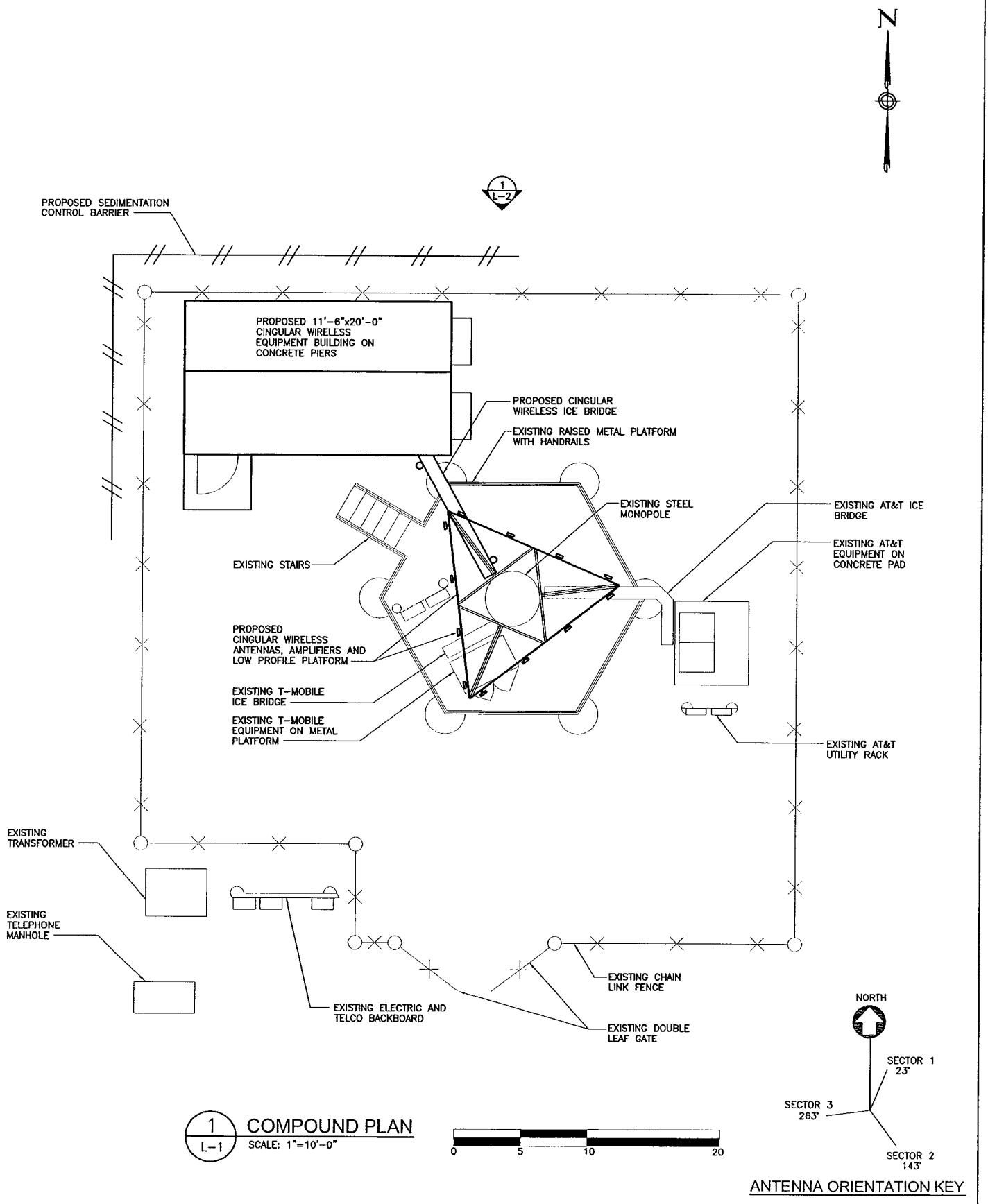



Mag 14.00
Thu Jul 17 14:48 2003
Scale 1:31,250 (at center)

2000 Feet

1000 Meters

- Local Road
- Primary State Route
- US Highway
- Interstate/Limited Access
- Major Connector
- State Route
- Exit
- Railroad
- Point of Interest
- Summit
- Cemetery
- Land
- Water
- River/Canal




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

ANTENNA ORIENTATION KEY

| | |
|---|---|
| PROJECT NO. | 36917560 |
| Designed by: | |
| Drawn by: | BAL |
| Checked by: | |
| Approved by: | |


**URS CORPORATION AES**
795 BROOK STREET, BLDG 5
ROCKY HILL, CONNECTICUT
1-(860)-529-8882


cingular WIRELESS
WIRELESS COMMUNICATIONS FACILITY

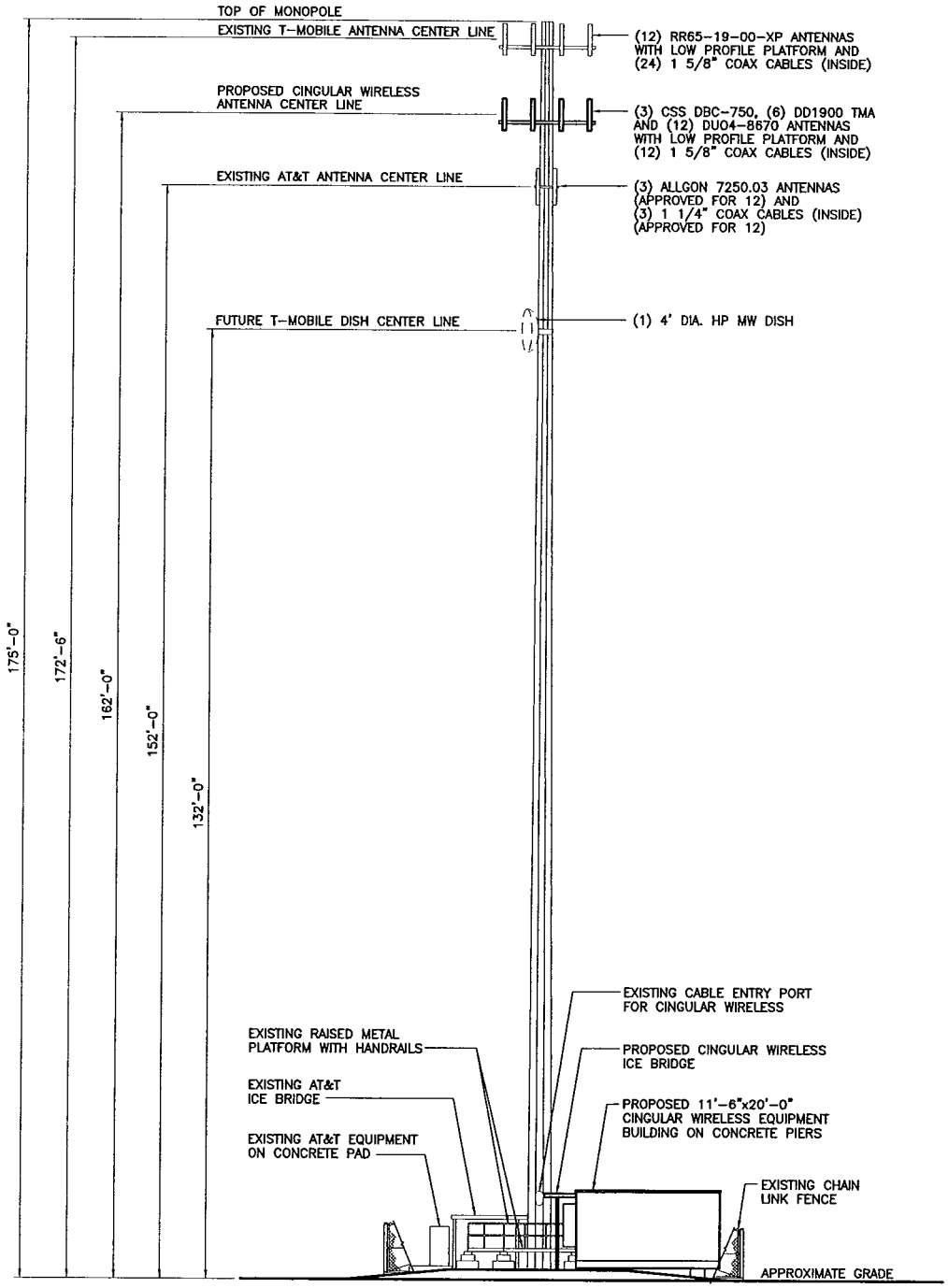
SITE ADDRESS: 300 GOVERNORS STREET
SOUTH WINDSOR, CONNECTICUT
T-MOBILE SITE NO. CT11279D

| REV. | DATE: | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

Scale: AS NOTED | Date: 07-10-03
Job No.CW1-009 | File No. L-1

Dwg. No. L-1

Dwg. 1 of 2




1 / L-2 TOWER ELEVATION

SCALE: 1"=25'-0"

0 12.5 25 50

| | |
|---|---|
| PROJECT NO. | 36917560 |
| Designed by: | |
| Drawn by: | BAL |
| Checked by: | |
| Approved by: | |


**URS CORPORATION AES**

795 BROOK STREET, BLDG 5
ROCKY HILL, CONNECTICUT
1-(860)-529-8882


cingular WIRELESS

WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS: 300 GOVERNORS STREET
SOUTH WINDSOR, CONNECTICUT
T-MOBILE SITE NO. CT11279D

| REV. | DATE: | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

Scale: AS NOTED | Date: 07-10-03

Job No.CW1-009 | File No. L-2 | Dwg. 2 of 2

Dwg. No. L-2

1047 N. 204th Avenue
Elkhorn, NE 68022
Ph:402-289-1888
Fax:402-289-1861

**SEMAAN ENGINEERING SOLUTIONS**

# 175 ft EEI Monopole
# Structural Analysis

Prepared for:
T-Mobile USA
12920 SE 38th Street
Bellevue, WA 98006

T-Mobile
Site Marketing Department

☑ Approved 6/3/03

☐ Denied

Site: CT11279D / South Windsor / Cingular
South Windsor, CT


May 28, 2003

Mr. Joseph Laurenzano
T-Mobile USA
12920 SE 38th Street
Bellevue, WA 98006

***Re: Site Number CT11279D – South Windsor - Cingular South Windsor, CT.***

Dear Mr. Laurenzano:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the EIA/TIA-222-F standard for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

**Description of Structure:**

The structure is a 169 ft EEI Monopole mounted on a 4 ft steel frame.

Refer to EEI drawing job #99-1371 Rev. 1 dated January 31, 2000 for a detailed description of the structure.

**Method of analysis:**

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. It also treats guys as exact cable elements and therefore is ideal for guyed towers. The analysis was performed in conformance with **EIA/TIA-222-F for a basic wind speed of 80 mph and 1/2" radial ice with reduced wind speed.** Wind is applied to the structure, accessories and antennas.

Structure loading:
Per the loading sheet supplied, the analysis was performed using the following loading: (Proposed loading in bold)

| Elev. (ft) | Qty. | Antennas and Mounts | Coax | Owner |
|---|---|---|---|---|
| 172.5 | 12 | RR65-19-00XP w/Artech LNA's Mounted On a EEI Low Profile platform | (24) 1-5/8 (Inside) | T-Mobile |
| 162.0 | 3 | CSS DBC-750 Mounted On a Low Profile platform | | Cingular |
| 162.0 | 6 | DD1900 TMA Mounted On Same Low Profile platform | | Cingular |
| 162.0 | 12 | DUO4-8670 Mounted On Same Low Profile platform | (12) 1-5/8 (Inside) | Cingular |
| 152.0 | 12 | Algon 7250.03 Mounted On a Low Profile platform | (12) 1-1/4 (Inside) | AT&T |
| 132.0 | 1 | HP MW Dish, 4' Dia. | (1) 1-5/8 (Inside) | T-Mobile |

All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.

All transmission lines are assumed running inside of pole shaft.

T-Mobile
Site Marketing Department
☒ Approved 4/3/03
☐ Denied

Results of Analysis:
Refer to the attached Computer Summary sheets for detailed results.

Structure:

The existing pole shaft is slightly overstressed at elevation 30 ft by 5.0%. This amount of overstress is considered acceptable. Therefore, the existing monopole is structurally capable of supporting the proposed antennas. The maximum structure usage is: 105.0%.

Foundation:

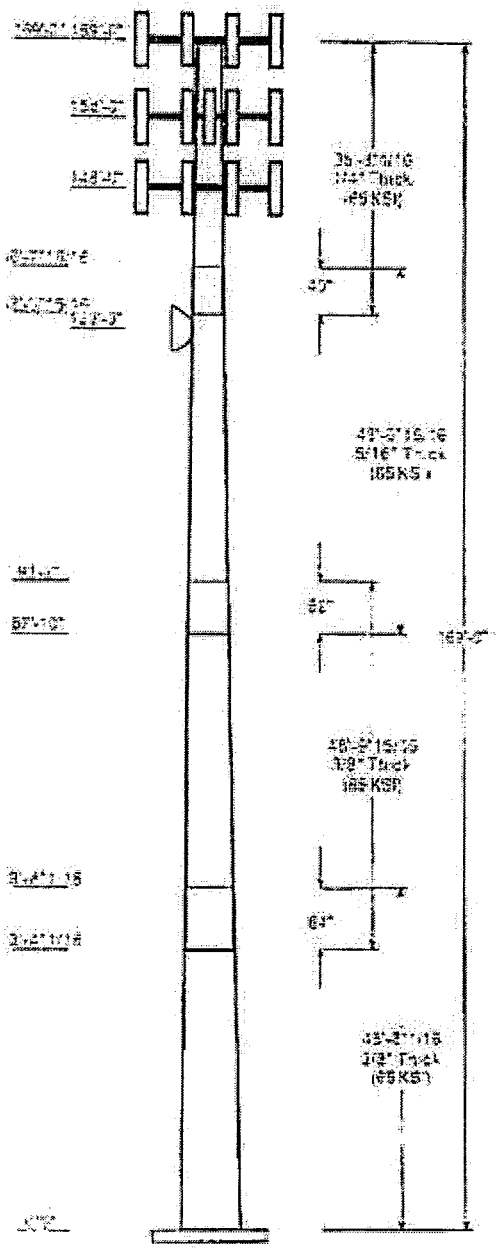
| Pole Reactions | Original Design Reactions | Current Analysis Reactions | % Of Design |
|---|---|---|---|
| Moment (ft-kips) | 2,577.60 | 2,673.65 | 103.7 |
| Shear (kips) | 20.00 | 20.93 | 104.7 |

The reactions calculated from the analysis slightly exceed the ones indicated on the original structural design. However, the excess amount is within acceptable engineering tolerances.

**Review and Recommendations:**

Based on the analysis results, the existing structure meets the requirements per the EIA/TIA-222-F standards for a basic wind speed of 30 mph and 1/2" radial ice with reduced wind speed.

**SEMAAN ENGINEERING SOLUTIONS**
1047 N 22nd Avenue
Phone: 402-289-1525
Fax: 402-289-1581



| Job Information | |
|---|---|
| Pole : | CT112780 |
| Description : | |
| Client : | T-Mobile USA-WA |
| Location : | South Windsor - AT&T South Windsor, CT |
| Type : | 18 Sides Base Elev (ft): 4.00 |
| Height (ft): | 169.00 Taper: 0.188613 (in/ft) |

**Sections Properties**

| Shaft Section | Length (ft) | Diameter (in) Across Flats Top | Across Flats Bottom | Thick (in) | Joint Type | Overlap Length (in) | Steel Taper (in/ft) | Steel Grade (ksi) |
|---|---|---|---|---|---|---|---|---|
| 1 | 48.670 | 38.12 | 45.50 | 0.375 | | 3.000 | 0.188613 | 65 |
| 2 | 48.630 | 29.16 | 38.07 | 0.375 | Slip Joint | 64.000 | 0.188613 | 65 |
| 3 | 48.630 | 21.19 | 30.30 | 0.313 | Slip Joint | 52.000 | 0.188613 | 65 |
| 4 | 35.670 | 15.50 | 22.22 | 0.250 | Slip Joint | 40.000 | 0.188613 | 65 |

**Discrete Appurtenance**

| Attach Elev (ft) | Force Elev (ft) | Type | Qty | Description |
|---|---|---|---|---|
| 169.000 | 169.000 | Panel | 12 | RRS-19-30XP w/Alltech LHA's |
| 169.000 | 169.000 | Platform | 1 | EEI Low Profile platform |
| 158.000 | 158.000 | Panel | 12 | DUO4-8670 |
| 158.000 | 158.000 | Platform | 1 | Low Profile platform |
| 158.000 | 158.000 | Panel | 6 | DB1900.7MA |
| 158.000 | 158.000 | Panel | 3 | CSS DBC-752 |
| 148.000 | 148.000 | Platform | 1 | Low Profile platform |
| 148.000 | 148.000 | Panel | 12 | Allgon 7250.03 |
| 128.000 | 128.000 | Dish | 1 | HP MW Dish, 4' Dia. |

**Load Cases / Deflections**

| Load Case | | Attach Elev (ft) | Translation (in) | Rotation (deg) |
|---|---|---|---|---|
| No Ice | No Ice Wind Speed = 30.00 mph w/ No Ice | | | |
| | | 169.000 | 194.89 | -10.553 |
| | | 158.000 | 170.58 | -10.523 |
| | | 148.000 | 145.92 | -10.124 |
| | | 128.000 | 103.27 | -8.798 |
| Ice | Ice Wind Speed = 60.25 mph w/ Ice 0.58 in Thick | | | |
| | | 169.000 | 165.99 | -9.324 |
| | | 158.000 | 147.69 | -9.203 |
| | | 148.000 | 125.86 | -8.858 |
| | | 128.000 | 94.71 | -7.651 |

**Reactions**

| Load Case | Moment (Kip-ft) | Shear (Kips) | Axial (Kips) |
|---|---|---|---|
| No Ice | 2,673,650 | 20.931 | -25.741 |
| Ice | 2,266,453 | 15.988 | -32.563 |

**Southwestern Bell Mobile Systems, LLC**
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7700
Fax: (860) 513-7190

**Michele G. Briggs**
*Manager of Real Estate*

July 28, 2003

Matthew B. Galligan, Town Manager
Town Hall, 1540 Sullivan Ave.
South Windsor, Connecticut 06074

**Re: Notice of Exempt Modification – Existing T-Mobile Telecommunications Tower Facility at Governors Street, South Windsor, Connecticut**

Dear Mr. Galligan:

Southwestern Bell Mobile Systems, LLC ("SBMS") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at Governors Street in South Windsor, Connecticut.

The facility is owned and operated by T-Mobile USA ("T-Mobile"), with offices at 4 Sylvan Way, Parsippany, New Jersey 07054. T-Mobile leases the land from Electron Technologies Corporation of South Windsor.

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 South Windsor 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 SBMS 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,

Michele G. Briggs
Manager of Real Estate

Enclosure