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@ct.gov
www.ct.gov/csc

July 31, 2006

Elizabeth H. Lankenau, AICP
Planner
Kise Straw & Kolodner Inc.
123 South Broad Street, Suite 1270
Philadelphia, PA 19109

RE: **EM-CING-119-007-155-064-060623** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2 West Street, Rocky Hill; 260 Beckley Road, Berlin; 1030 New Britain Avenue, West Hartford; and 99 Meadow Street, Hartford, Connecticut.

Dear Ms. Lankenau:

At a public meeting held on July 27, 2006, 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 June 22, 2006, and errata sheets received July 20, 2006, including the placement of all necessary equipment and shelters within the tower compounds. 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 existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities 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. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to any of 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,

Colin C. Tait FOC

Colin C. Tait
Chairman

CCT/laf

c: See Attached List.

List Attachment.

c: The Honorable Adam P. Salina, Mayor, Town of Berlin
Hellyn Riggins, Town Planner, Town of Berlin
The Honorable Eddie A. Perez, Mayor, City of Hartford
Robert A. LaPorte, Chairman of City Planning Commission, City of Hartford
Lee C. Erdmann, Chief Operating Officer, City of Hartford
The Honorable Scott Slifka, Mayor, Town of West Hartford
Barry M. Feldman, Town Manager, Town of West Hartford
Mila Limson, Town Planner, Town of West Hartford
The Honorable Anthony P. LaRosa, Mayor, Town of Rocky Hill
Barbara Gilbert, Town Manager, Town of Rocky Hill
Kimberly Ricci, Director of Planning, Town of Rocky Hill
Karen L. Couture, Site Acquisition Specialist
Thomas F. Flynn III, Nextel Communications Inc.
Michele G. Briggs, New Cingular Wireless PCS, LLC
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Eric Rabon, Spectrasite Communications
Christine Farrell, T-Mobile
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Thomas J. Regan, Esq., Brown Rudnick Berlack & Israels LLP
Jeremy McDavitt, American Tower Corporation

Perrone, Michael EM-CING-119-007-155-064-060623

From: Karen Couture [karencouture@myeastern.com]
Sent: Thursday, July 20, 2006 2:22 PM
To: Perrone, Michael
Subject: 99 Meadow Street, Hartford, CT-Errata Sheet
Importance: High

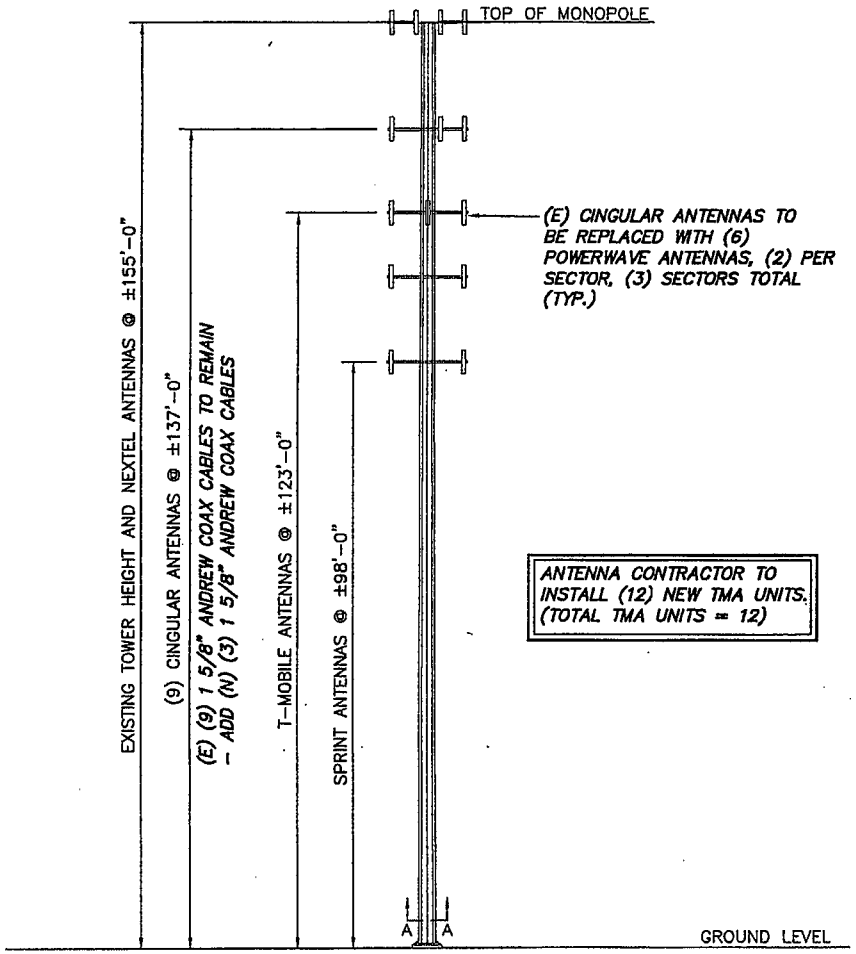
Dear Mr. Perrone,

Attached you will find an errata sheet for 99 Meadow Street, Hartford, CT. The tower elevation drawings have been revised to show Nextel at 155'.

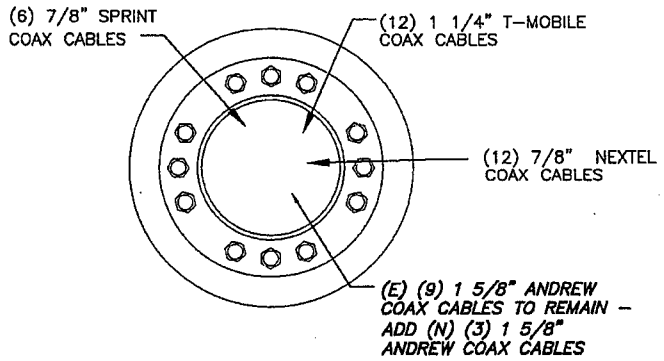
Should you have any further questions, please do not hesitate to call.

Thank you.

Karen L. Couture
Site Acquisition Specialist
Mobile: 860-389-4924
E-Fax: 888-281-6394
Email: karencouture@myeastern.com



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



SECTION VIEW

LATITUDE: 41° 44' 35.5"
LONGITUDE: 72° 40' 03.1"

cingular
CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

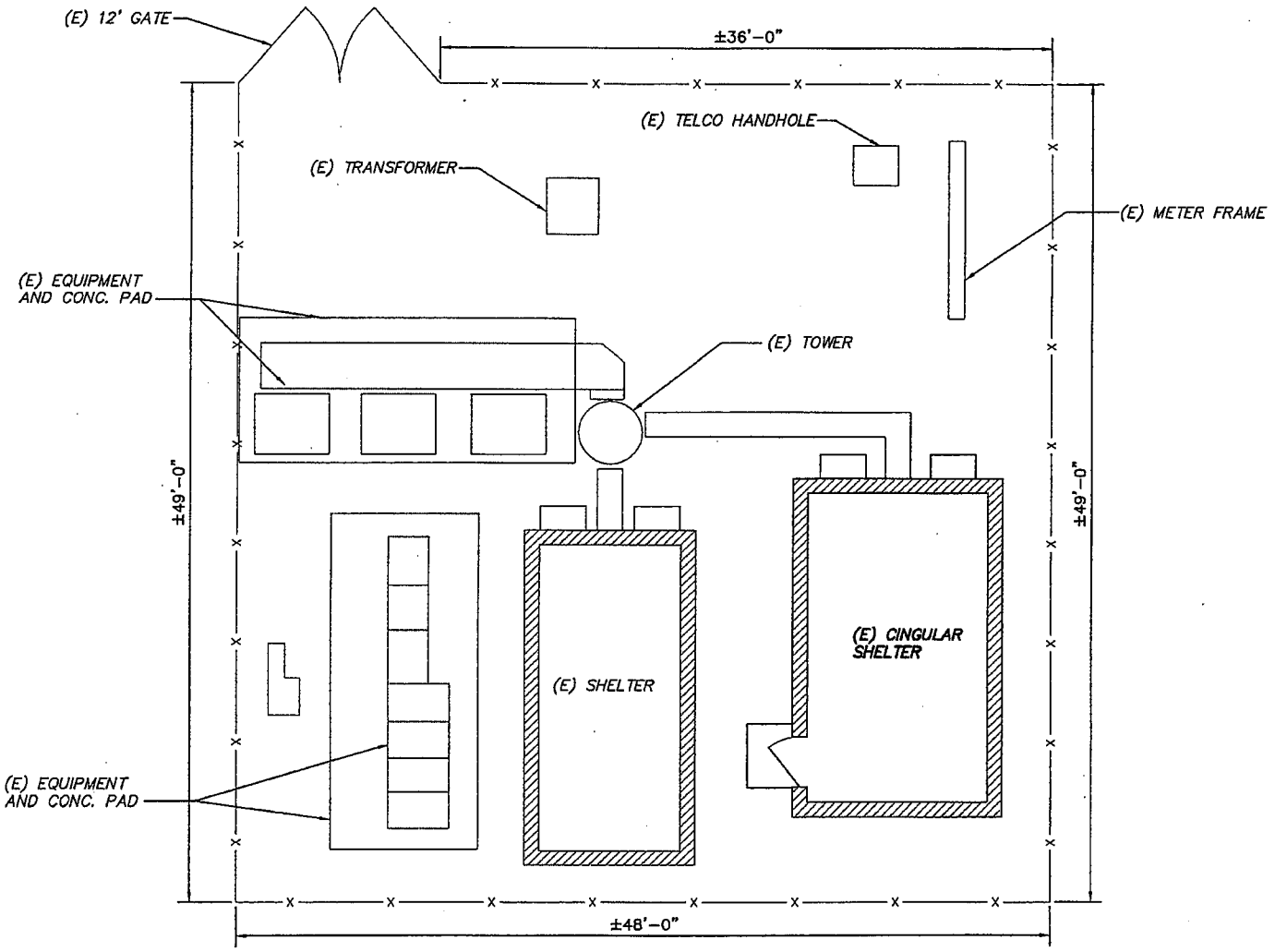
CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-041

SITE NAME: I-91 – ROUTE 5 SPLIT
SITE NUMBER: 5127
99 MEADOW STREET
HARTFORD, CT 06101

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
5	07/20/06	MISC. REVISIONS	PHR	CJW	CJW
4	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/18/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/24/06		DAD	CJW	CJW

SITE NUMBER
5127



COMPOUND LAYOUT

SCALE: 1" = 10'-0"

TRUE

LATITUDE: 41° 44' 35.5"
LONGITUDE: 72° 40' 03.1"

cingular
CINGULAR WIRELESS
550 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

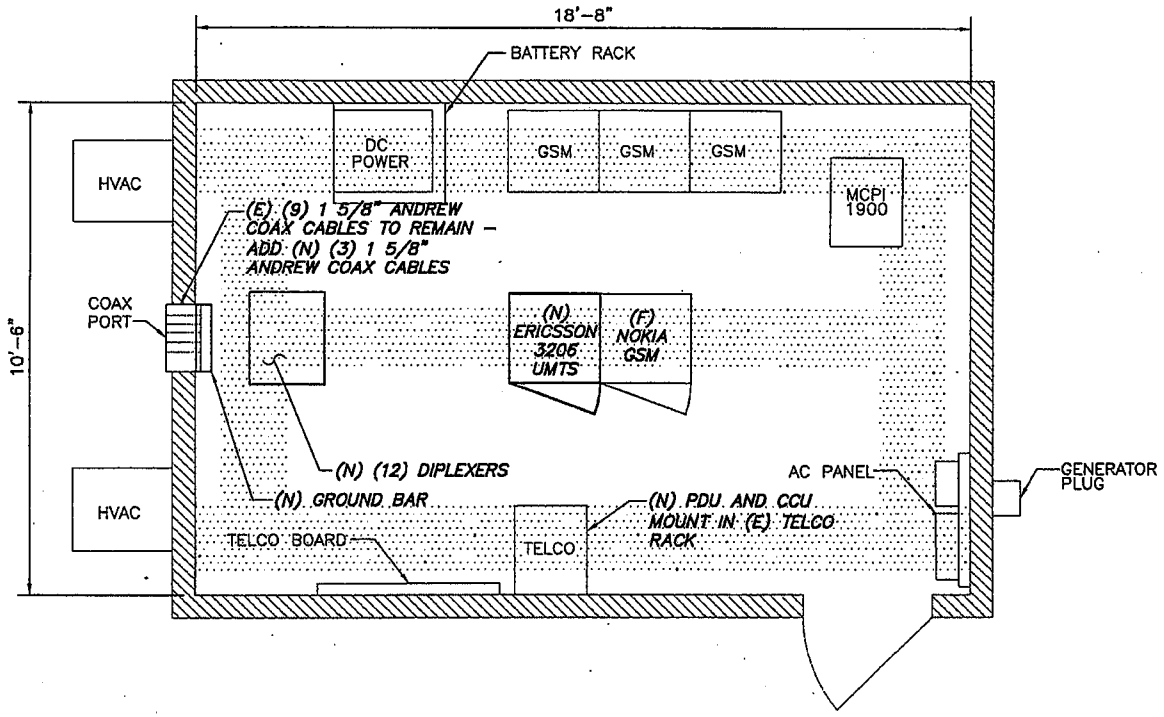
infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-041

SITE NAME: I-91 - ROUTE 5 SPLIT
SITE NUMBER: 5127
99 MEADOW STREET
HARTFORD, CT 06101

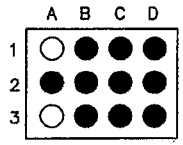
NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
5	07/20/06	MISC. REVISIONS	PHR	CJW	CJW
4	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/18/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/24/06		DAD	CJW	CJW

SITE NUMBER
5127

NOTE:
SHELTER INTERIOR
IS 8'-9" HIGH

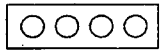


(E) CABLE ENTRY PORT
(INTERIOR VIEW)



● USED
○ UNUSED

(N) ENTRY PORT
EXPANSION



NOTE:
1 ADDITIONAL COAX PORT
NEEDED TO ACCOMMODATE
NEW COAX

SHELTER LAYOUT

SCALE: 1/4" = 1'-0"

LATITUDE: 41° 44' 35.5"
LONGITUDE: 72° 40' 03.1"

cingular
CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-041

SITE NAME: I-91 – ROUTE 5 SPLIT
SITE NUMBER: 5127
99 MEADOW STREET
HARTFORD, CT 06101

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
5	07/20/06	MISC. REVISIONS	PHR	CJW	CJW
4	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/18/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/24/06		DAD	CJW	CJW

SITE NUMBER
5127

Perrone, Michael EM-CING-119-007-199-064-06062

From: Karen Couture [karencouture@myeastern.com]
Sent: Thursday, July 20, 2006 1:57 PM
To: Perrone, Michael
Subject: 260 Beckley Road, Berlin, CT-Errata Sheet
Importance: High

Dear Mr. Perrone,

Attached you will find an errata sheet for 260 Beckley Road, Berlin, CT. The power density table has been revised to show Cingular at 152' instead of 150' which was originally submitted.109.

Should you have any further questions, please do not hesitate to call.

Thank you.

Karen L. Couture
Site Acquisition Specialist
Mobile: 860-389-4924
E-Fax: 888-281-6394
Email: karencouture@myeastern.com

Addition of the UMTS broadcasts will not increase the exposure to radio frequency electromagnetic energy, measured at the base of the tower, to or above the standard adopted by the state of Connecticut and the Federal Communications Commission. The table below summarizes the cumulative results for a point of interest at the tower's base of the "worst-case" exposure calculations resulting from all carriers co-located on this tower. The calculations are in accordance with FCC OET Bulletin No. 65 (1997), and for simplicity an assumption is made that the antennas are all pointed down, thus focusing their energy at the tower's base.

Site # 1014								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu W/cm^2$)	FCC Limit ($\mu W/cm^2$)	Percent of Limit (%)
Cingular UMTS	152	1935.0	1	500.0	820.0	8.0	1000	0.80%
T-Mobile	163	1900.0	8	120.0	1574.4	13.0	1000	1.30%
Sprint	130	1900.0	11	122.0	2200.9	28.6	1000	2.86%
Sprint	127	1900.0	11	122.0	2200.9	29.9	1000	2.99%
Sprint	123	1900.0	11	122.0	2200.9	31.9	1000	3.19%
Cingular Omni	162	150.0	1	500.0	820.0	6.9	200	3.43%
Cingular 1900	150	1900.0	2	427.0	1400.6	13.7	1000	1.37%
Cingular 800	150	880.0	2	296.0	970.9	9.5	587	1.61%
Cingular TDMA	150	880.0	10	100.0	1640.0	16.0	587	2.72%
Verizon	116	859.0	9	200.0	2952.0	48.1	573	8.40%
AT&T	106	1900.0	4	250.0	1640.0	32.0	1000	3.20%
Nextel	96	851.0	12	100.0	1968.0	46.8	567	8.25%
TOTAL								**40.12%**

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
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www.ct.gov/csc

June 28, 2006

The Honorable Eddie A. Perez
Mayor
City of Hartford
Municipal Building
550 Main Street
Hartford, CT 06103

RE: **EM-CING-119-007-155-064-060623** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2 West Street, Rocky Hill; 260 Beckley Road, Berlin; 1030 New Britain Avenue, West Hartford; and 99 Meadow Street, Hartford, Connecticut.

Dear Mayor Perez:

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

The Council will consider this item at the next meeting scheduled for July 27, 2006 at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by July 20, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Robert A. LaPorte, Chairman of City Plan Com., City of Hartford
Lee C. Erdmann, Chief Operating Officer, City of Hartford

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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E-Mail: siting.council@po.state.ct.us
www.ct.gov/csc

June 28, 2006

The Honorable Scott Slifka
Mayor
Town of West Hartford
Town Hall
50 South Main Street, Room 313
West Hartford, CT 06107-2431

RE: **EM-CING-119-007-155-064-060623** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2 West Street, Rocky Hill; 260 Beckley Road, Berlin; 1030 New Britain Avenue, West Hartford; and 99 Meadow Street, Hartford, Connecticut.

Dear Mayor Slifka:

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

The Council will consider this item at the next meeting scheduled for July 27, 2006 at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by July 20, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Mila Limson, Town Planner, Town of West Hartford
Barry M. Feldman, Town Manager, Town of West Hartford

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

June 28, 2006

The Honorable Anthony P. LaRosa
Mayor
Town of Rocky Hill
Town Hall
699 Old Main Street
P. O. Box 657
Rocky Hill, CT 06067

RE: **EM-CING-119-007-155-064-060623** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2 West Street, Rocky Hill; 260 Beckley Road, Berlin; 1030 New Britain Avenue, West Hartford; and 99 Meadow Street, Hartford, Connecticut.

Dear Mayor LaRosa:

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

The Council will consider this item at the next meeting scheduled for July 27, 2006 at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by July 20, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Kimberly Ricci, Director of Planning, Town of Rocky Hill
Barbara Gilbert, Town Manager, Town of Rocky Hill

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

June 28, 2006

The Honorable Adam P. Salina
Mayor
Town of Berlin
240 Kensington Road
Kensington, CT 06037

RE: **EM-CING-119-007-155-064-060623** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2 West Street, Rocky Hill; 260 Beckley Road, Berlin; 1030 New Britain Avenue, West Hartford; and 99 Meadow Street, Hartford, Connecticut.

Dear Mayor Salina:

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

The Council will consider this item at the next meeting scheduled for July 27, 2006 at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by July 20, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S/Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Hellyn Riggins, Town Planner, Town of Berlin

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

EM-CING-119-007-155-064-060623

22 June 2006

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

RE: Notice of Exempt Modification –Four (4) Existing Telecommunications Tower Facilities in Hartford County
Site 1: 2 West Street, Rocky Hill
Site 2: 260 Beckley Road, Berlin
Site 3: 1030 New Britain Avenue, West Hartford
Site 4: 99 Meadow Street, Hartford

Dear Chairman Katz and Members of the Council:

Kise Straw & Kolodner Inc., in association with Network Building & Consulting, LLC, submits this notice of intent to modify existing telecommunications facilities. New Cingular Wireless PCS, LLC ("Cingular") proposes to remove and replace telecommunications antennas and associated equipment located on an existing facility in the above-referenced municipalities. Cingular operates under licenses issued by the Federal Communications Commission (FCC) to provide cellular and PCS mobile telephone service in the areas to be served by the proposed installations.

Please accept this letter and attachments as notification to the Council, pursuant to Regulations of Connecticut State Agencies (RCSA) Section 16-50j-73. This submission will demonstrate that the proposed changes fall within the limits of an exempt modification as described under the RCSA Section 16-50j-72(b)(2).

In accordance with RCSA Section 16-50j-73, the chief elected officials will receive notification of the work proposed at locations within their jurisdiction.

Attached you will find 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 planned changes to these facilities fall within those activities explicitly provided for in RCSA Section 16-50j-72(b)(2). As such, the proposed work does not result in any substantial adverse environmental effect:

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

James Nelson Kise, AIA/AICP/PP

Scott W. Killinger, AIA

John R. Gibbons, AIA/AICP

Philip E. Scott, EA

Suzanna Barucco

Katherine Bottom, LEED

LaVern Browne

Johnette Davies

Petar D. Glumac, Ph.D

Douglas S. Heckrotte, RA/LEED

Jody Holton, AICP

Marian Maxfield Hull, AICP/PP

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.kskl.com

1. The proposed work does not affect the height of the structure.

2. The proposed changes do not affect the existing property boundaries. All proposed work will occur on the property controlled by Cingular.

3. The proposed work will not increase noise levels at the site boundary by six (6) decibels or more.

4. Addition of the UMTS broadcasts will not increase the exposure to radio frequency electromagnetic energy, measured at the base of the tower, to or above the standard adopted by the state of Connecticut and the FCC. The power density tables provided for each facility summarize the cumulative results for a point of interest at the tower's base of the "worst-case" exposure calculations resulting from all carriers co-located on this tower. The calculations are in accordance with the Federal Communications Commission's Office of Engineering and Technology Bulletin No. 65 (1997), and for simplicity, an assumption is made that the antennas are all pointed down, thus focusing their energy at the tower's base.

For the foregoing reasons, Cingular respectfully submits that proposed changes at the these facilities constitute an exempt modification under RCSA Section 16-50j-72(b)(2).

Please do not hesitate to call me at 215.790.1050 ext. 138 with questions concerning this notice. Thank you for your consideration of this matter.

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

Attachments

cc: Honorable Anthony LaRosa, Mayor, Town of Rocky Hill
Honorable Adam P. Salina, Mayor, Town of Berlin
Honorable Scott, Slifka, Mayor, Town of West Hartford
Honorable Eddie A. Perez, Mayor, City of Hartford

2 West Street, Rocky Hill, CT

Summary Sheet
Project Location Map
Site Plan and Elevation
Structural Analysis
Elected Official Letter

CINGULAR WIRELESS
Proposed Modifications

Site Address: 2 West Street, Rocky Hill, CT

Site Owner: ATC & Northeast Utilities

Type of Existing Facility: 100' high monopole within a 60' x 50' compound; surrounded by chain link fence

Antenna Configuration: Center line – 103' above ground level; existing DUO4-8670 units to be replaced with six (6) Powerwave 7770 units; *specification attached*

TMA Configuration: Existing units to be replaced with twelve (12) LGP 214nn units to be installed at the same height as the antennas; *specification attached*

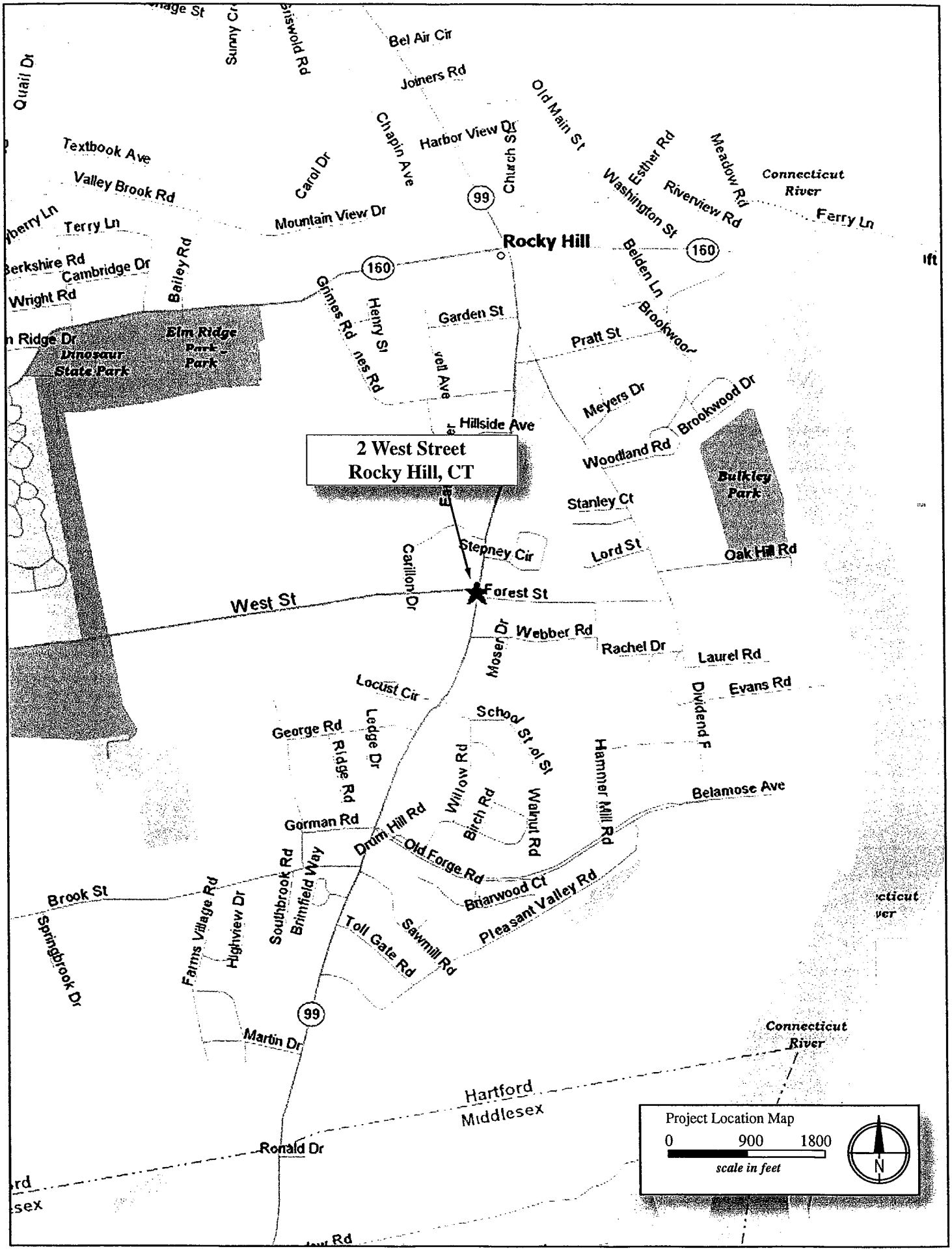
Coaxial Cables: Nine (9) existing 7/8" diameter cables to remain; three (3) cables of the same dimension to be added

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 17.26% of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the facility would be within applicable standards.

Site # 1009								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu W/cm^2$)	FCC Limit ($\mu W/cm^2$)	Percent of Limit (%)
Cingular UMTS	103	1935.0	1	500.0	820.0	17.0	1000	1.70%
Cingular TDMA	103	880.0	16	100.0	2624.0	54.2	587	9.25%
Cingular 800	103	880.0	2	296.0	970.9	20.1	587	3.42%
Cingular 1900	103	1900.0	2	427.0	1400.6	29.0	1000	2.90%
TOTAL								**17.26%**

Structural Analysis: *Structural Analysis* attached.


2 West Street
Rocky Hill, CT
Rocky Hill
Elm Ridge Park
Dinosaur State Park
Bulkley Park
West St
Forest St
Hillside Ave
Garden St
Pratt St
Meyers Dr
Brookwood Dr
Woodland Rd
Stanley Ct
Lord St
Oak Hill Rd
Stepney Cir
Carillon Dr
Webber Rd
Rachel Dr
Laurel Rd
Evans Rd
Locust Cir
George Rd
Ledge Dr
Ridge Rd
School St
Willow Rd
Birch Rd
Walnut Rd
Hammer Mill Rd
Belamose Ave
Gorman Rd
Drum Hill Rd
Old Forge Rd
Briarwood Ct
Pleasant Valley Rd
Brook St
Southbrook Rd
Brimfield Way
Toll Gate Rd
Sawmill Rd
Farms Village Rd
Highview Dr
Springbrook Dr
Martin Dr
Ronald Dr
Hartford
Middlesex
Connecticut River
Ferry Ln
Riverview Rd
Meadow Rd
Esther Rd
Washington St
Old Main St
Church St
Harbor View Dr
Chapin Ave
Carol Dr
Mountain View Dr
Valley Brook Rd
Textbook Ave
Terry Ln
Cambridge Dr
Wright Rd
Bailey Rd
Grimes Rd
Henry St
Belden Ln
Joiners Rd
Bel Air Cir
Quail Dr
Project Location Map
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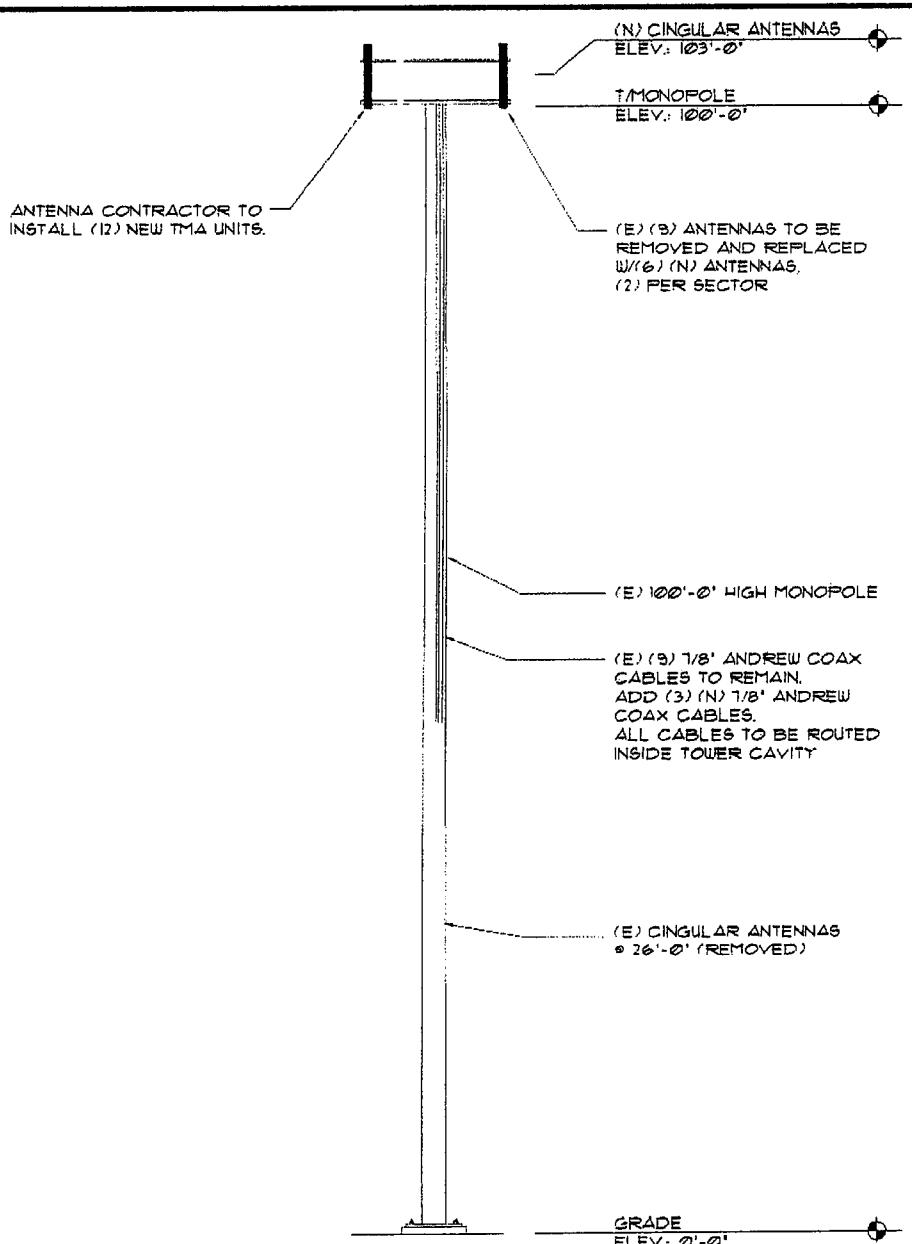


FINAL ANTENNA CONFIGURATION
(6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
(12) 7/8" DIA. COAX CABLES
(12) TMAS

1 TOWER ELEVATION
1/16" = 1'-0"

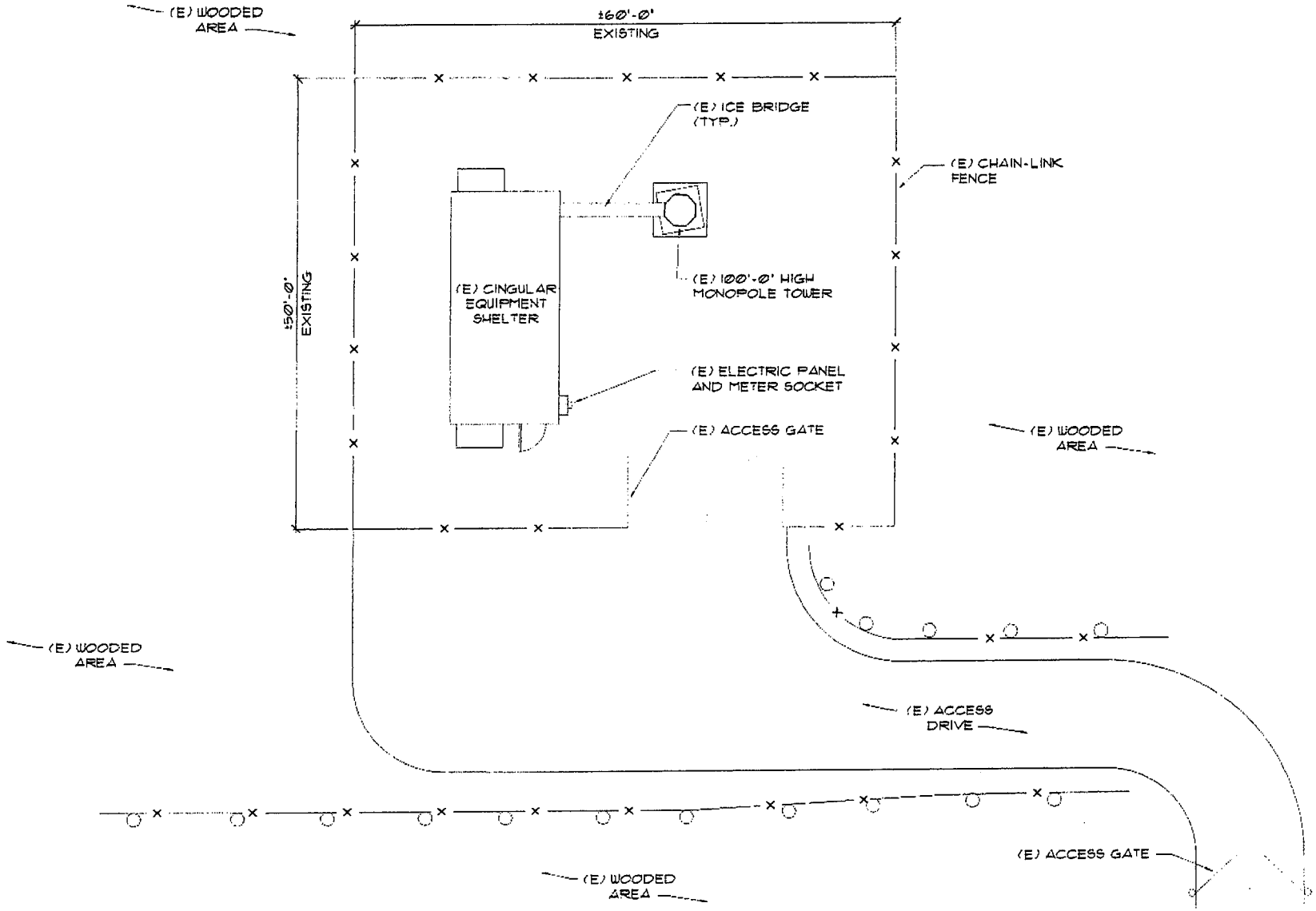
cingular WIRELESS | ERICSSON

CH2M HILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
3	06-20-06	ISSUED FOR CSC SUBMITTAL	RR	JZ	JZ
2	04-21-06	ISSUED FOR CSC REVIEW	FH	JZ	JZ
1	04-03-06	SCOPING REVIEW	GB	JZ	JZ

SCALE: 1/16"=1'-0" | CHECKED BY: JZ | DRAWN BY: GB

CINGULAR WIRELESS
SITE #: 1009
SITE NAME: ROCKY HILL
2 WEST ST., ROCKY HILL, CT., 06067
DRAWING NUMBER: 1009
REV: 0



1 EXISTING SITE PLAN
1/16" = 1'-0"

cingular WIRELESS SM

ERICSSON

CH2M HILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
2	06-20-06	ISSUED FOR CSC SUBMITTAL	RR	JZ	JZ
1	04-21-06	ISSUED FOR CSC REVIEW	FH	JZ	JZ

SCALE: 1/16" = 1'-0" | CHECKED BY: JZ | DRAWN BY: FH

CINGULAR WIRELESS
SITE #: 1009
SITE NAME: ROCKY HILL
2 WEST ST., ROCKY HILL, CT., 06067
DRAWING NUMBER: 1009
REV: 0

302479-PAT
5/19/2006

AMERICAN TOWER

Level 1 Structural Evaluation [1]		
ATC Site Number & Name	**302479, RKHL-Rocky Hill**	**Engineering ID: 26328511**
Cingular Site Number & Name	**CT1009, Rocky Hill**	
Site Address	2 West Street Rocky Hill, CT 06067 Hartford County	
Tower Description	**100 ft Monopole**	
Standards & Codes [2]	ANSI/TIA/EIA-222-F (1996) **80 mph w/ 0" radial ice** **69.3 mph w/ ½" radial ice**	2003 International Building Code **90 mph w/ 0" radial ice**

Table 1: Existing and Proposed Antenna Configuration					
HEIGHT *(Ft)*	**ANTENNA**	**CARRIER**	**COAX**	**[I]/[O]** [a]	**STATUS**
103	**(6) Powerwave 7770** **(6) Powerwave LGP2140X** **on Platform w/ Handrails**	**Cingular**	**(12) 7/8"**	**I**	**Proposed**
26	(1) Nokia CS72187.01 on Side Arm Mount	Cingular	(1) 1/2"	I	Existing

[a] *[I] / [O] denotes coax installed inside or outside of monopole respectively.*

The subject tower and foundation ***are adequate*** to support the above stated loads in conformance with specified requirements. [3]

STATE OF CONNECTICUT
RAPHAEL I. MOHAMED
No. 23112
PROFESSIONAL ENGINEER

5/24/06

Raphael I. Mohamed, P.E.
Engineering Manager

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Connecticut.

[1] The existing and proposed loads of *Table 1* are compared to the tower's current design capacity or previous analysis.
[2] The design wind criteria are compared to the current code requirements.
[3] The tower should be re-evaluated as future loads are added or if actual loads are found different from those mentioned in *Table 1*.

AMERICAN TOWER CORPORATION
400 Regency Forest Drive, Cary, NC 27511 ph: 919-468-0112 fax: 919-468-8522

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

22 June 2006

Honorable Anthony LaRosa
Mayor, Town of Rocky Hill
761 Old Main Street
Rocky Hill, CT 06067

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at 2 West Street, Rocky Hill, Connecticut

Dear Mr. LaRosa:

New Cingular Wireless PCS, LLC ("Cingular") proposes to remove and replace telecommunications antennas and associated equipment located on an existing tower at the above-referenced location. The facility is now controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067.

Proposed Modifications

Cingular proposes to remove the existing antennas and replace them with a total of six (6) new antennas, located at an existing centerline height of approximately 103' above ground level. Cingular will keep nine (9) existing 7/8" diameter coaxial cables and add three (3) cables of the same dimension. It will remove the existing tower mounted amplifiers and replace them with twelve (12) new units, located at the same height as the antennas.

In summary, the final antenna configuration at 2 West Street will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

A structural evaluation has demonstrated that the tower will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete.

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.kskl.com

Statutory Considerations

The proposed work will not affect the height of the existing structure, nor will it alter the existing property boundaries. Furthermore, the proposed work will not increase noise levels at the facility's site boundary by six (6) decibels or more. Operation of additional antennas will not increase the radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the Federal Communications Commission.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council (CSC) as required by the Regulations of Connecticut State Agencies (RCSA), Section 16-50j-73. Please accept this letter as notification to the Town of Rocky Hill under Section 16-50j-73 that the proposed work constitutes an exempt modification pursuant to RCSA Section 16-50j-72(b)(2).

Should you have any questions or require additional information about the plans or the CSC's procedures, please do not hesitate to contact me (215.790.1050 ext. 138) or Mr. Derek Phelps, Executive Director, Connecticut Siting Council (860.827.2935).

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

260 Beckley Road, Berlin, CT

Summary Sheet
Project Location Map
Site Plan and Elevation
Structural Analysis
Elected Official Letter

CINGULAR WIRELESS
Proposed Modifications

Site Address: 260 Beckley Road, Berlin, CT; *Project Location Map* attached

Site Owner: American Tower

Type of Existing Facility: 150' monopole and a 20' x 23' equipment shelter in a 55' x 57' compound

Antenna Configuration: Center line – 152' above ground level; remove existing CSS DUO 1417 antennas and replace with six (6) Powerwave 7770 units; *specification attached*

TMA Configuration: Six (6) existing units to remain and add six (6) new LGP 214nn units; *specification attached*

Coaxial Cables: Existing coaxial cables to be removed and add twelve (12) new 1 5/8" diameter cables

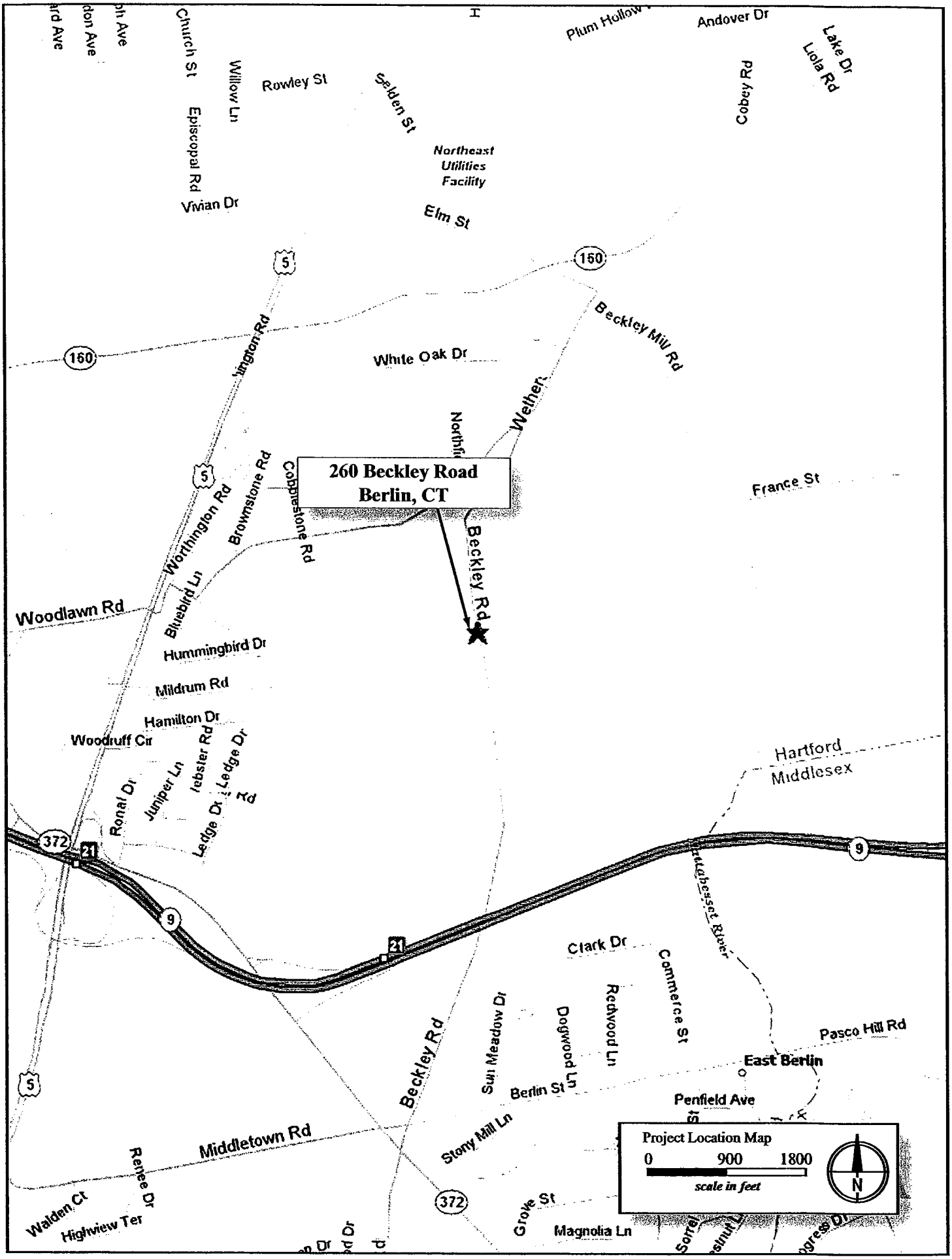
Other Work: Add one (1) Ericsson RBS 3206 equipment cabinet to an existing equipment shelter

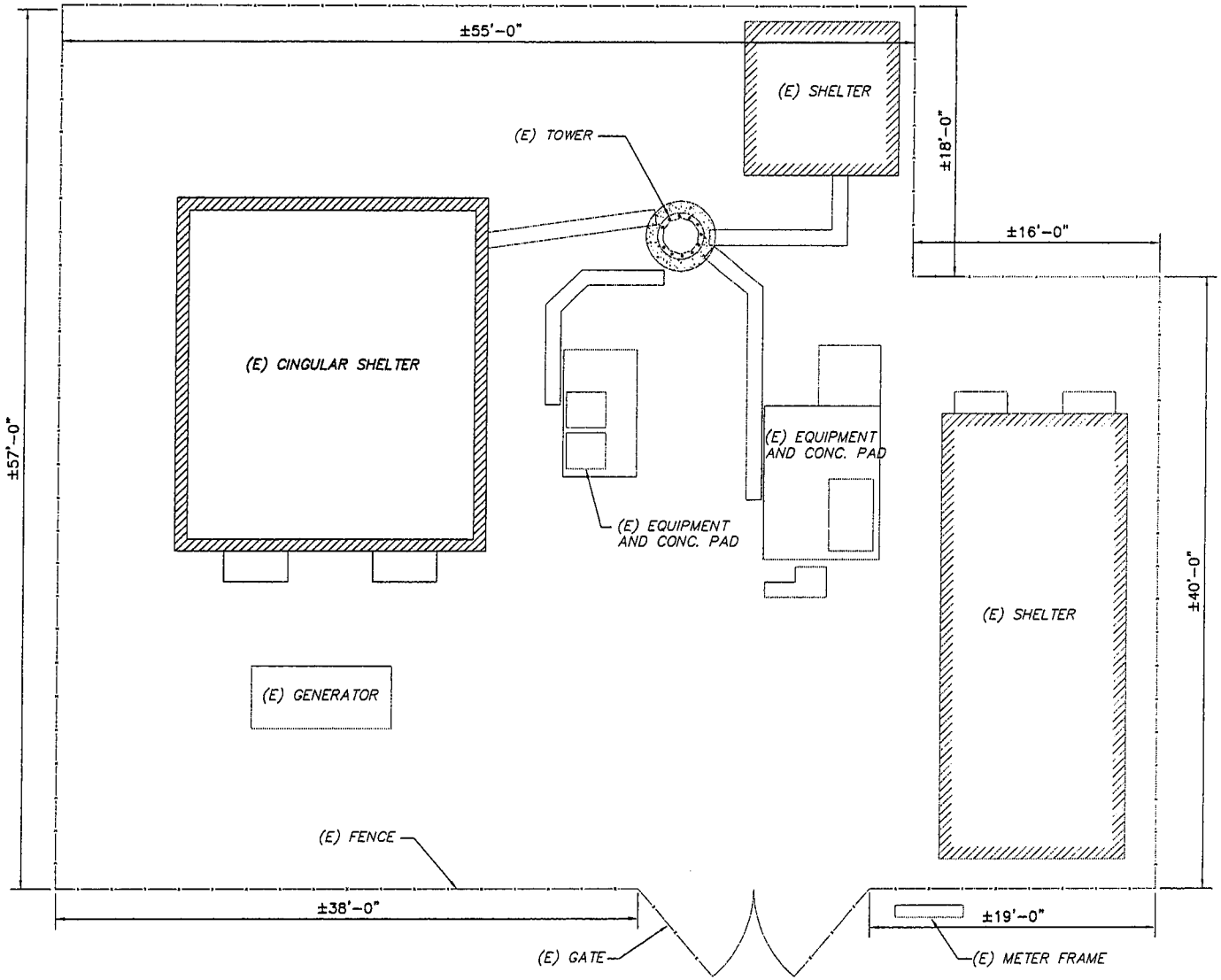
Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 40.12% of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the facility would be within applicable standards.

Site # 1014								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu W/cm^2$)	FCC Limit ($\mu W/cm^2$)	Percent of Limit (%)
Cingular UMTS	152	1935.0	1	500.0	820.0	8.0	1000	0.80%
T-Mobile	163	1900.0	8	120.0	1574.4	13.0	1000	1.30%
Sprint	130	1900.0	11	122.0	2200.9	28.6	1000	2.86%
Sprint	127	1900.0	11	122.0	2200.9	29.9	1000	2.99%
Sprint	123	1900.0	11	122.0	2200.9	31.9	1000	3.19%
Cingular Omni	162	150.0	1	500.0	820.0	6.9	200	3.43%
Cingular 1900	150	1900.0	2	427.0	1400.6	13.7	1000	1.37%
Cingular 800	150	880.0	2	296.0	970.9	9.5	587	1.61%
Cingular TDMA	150	880.0	10	100.0	1640.0	16.0	587	2.72%
Verizon	116	859.0	9	200.0	2952.0	48.1	573	8.40%
AT&T	106	1900.0	4	250.0	1640.0	32.0	1000	3.20%
Nextel	96	851.0	12	100.0	1968.0	46.8	567	8.25%
TOTAL								**40.12%**

Structural Analysis: *Structural Analysis* attached.


260 Beckley Road
Berlin, CT
Project Location Map
0 900 1800
scale in feet
N
Beckley Rd
Beckley Mill Rd
Woodlawn Rd
Middletown Rd
Hartford
Middlesex
East Berlin
Northeast Utilities Facility
Elm St
Rowley St
Andover Dr
Plum Hollow
Lake Dr
Liola Rd
Cobey Rd
Church St
Episcopal Rd
Willow Ln
Selden St
Vivian Dr
White Oak Dr
Brownstone Rd
Cobblestone Rd
Worthington Rd
Bluebird Ln
Hummingbird Dr
Mildrum Rd
Hamilton Dr
Woodruff Cir
Juniper Ln
Ledge Dr
Rd
France St
Clark Dr
Commerce St
Redwood Ln
Dogwood Ln
Sun Meadow Dr
Berlin St
Pasco Hill Rd
Penfield Ave
Stony Mill Ln
Grove St
Magnolia Ln
Walden Ct
Highview Ter
Renee Dr
Connecticut River
5
9
21
150
160
372



COMPOUND LAYOUT

SCALE: 1" = 10'-0"

LATITUDE: 41° 37' 05.7"
LONGITUDE: 72° 43' 00.5"

cingular
CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

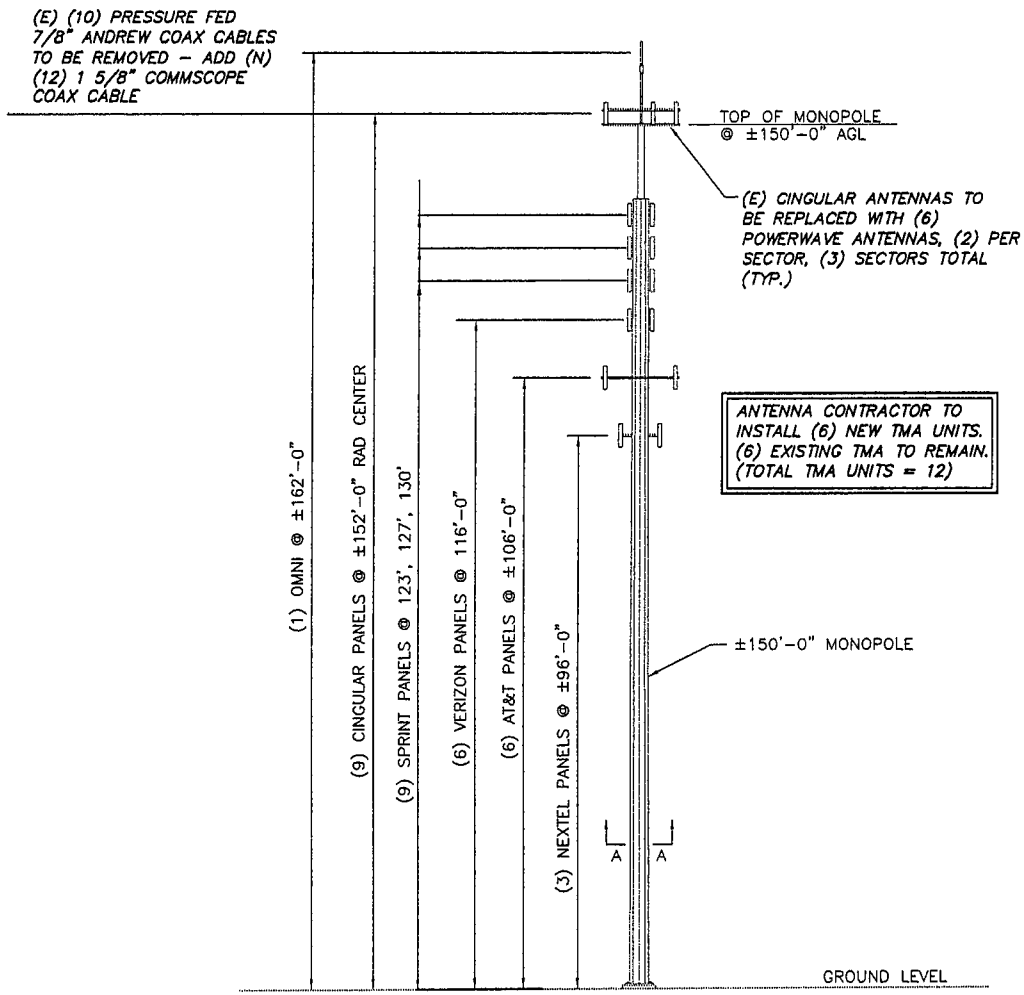
infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-015

SITE NAME: BERLIN

SITE NUMBER: 1014
260 BECKLEY ROAD
BERLIN, CT 06037

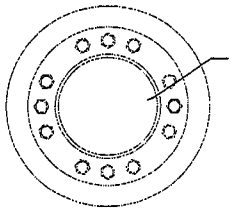
NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
6	05/18/06	MISC. REVISIONS	PHR	CJW	CJW
5	05/16/06	MISC. REVISIONS	PHR	CJW	CJW
4	05/12/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/17/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/05/06	MISC. REVISIONS	MAK	CJW	CJW
1	04/03/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/21/06		MAK	CJW	CJW

SITE NUMBER
1014



TOWER ELEVATION

SCALE: 1" = 30'-0"



SECTION A–A

LATITUDE: 41° 37' 05.7"
LONGITUDE: 72° 43' 00.5"

cingular
CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-015

SITE NAME: BERLIN

SITE NUMBER: 1014
260 BECKLEY ROAD
BERLIN, CT 06037

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
6	05/18/06	MISC. REVISIONS	PHR	CJW	CJW
5	05/16/06	MISC. REVISIONS	PHR	CJW	CJW
4	05/12/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/17/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/05/06	MISC. REVISIONS	MAK	CJW	CJW
1	04/03/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/21/06		MAK	CJW	CJW

SITE NUMBER
1014

302483-PAT
6/09/06

AMERICAN TOWER
CORPORATION

Level 1 Structural Evaluation [1]		
ATC Site Number & Name	**302483, Brln - Berlin**	**Engineering ID: 26351611**
Cingular Site Number & Name	**CT 1014, Berlin**	
Site Address	260 Beckley Road Berlin, CT 06037 Hartford County	
Tower Description	**167.5 ft ITT Meyer Monopole**	
Standards & Codes [2]	ANSI/TIA/EIA-222-F (1996) **80 mph w/ 0" radial ice** **69 mph w/ ½" radial ice**	2003 International Building Code **105 mph w/ 0" radial ice**

Table 1: Existing and Proposed Antenna Configuration

HEIGHT *(Ft)*	ANTENNA	CARRIER	COAX	[I]/[O] [a]	STATUS
163	(3) EMS RR90-17-00DPL2 in Concealment Mount	T-Mobile	(6) 1-5/8"	I	Existing
152	(6) ADC CGTMDD-1900 on Platform w/ Handrails	Cingular	--	I	Existing
152	**(6) Allgon 7770** **(6) Powerwave LGP-2140X** **on Platform w/ Handrails**	**Cingular**	**(12) 1-1/4"**	**I**	**Proposed**
130 127 123	(3) Allgon 7184.05 (3) Allgon 7184.05 (3) Allgon 7184.05 on Flush Mounts	Sprint	(3) 1-5/8" (3) 1-5/8" (3) 1-5/8"	I I O	Existing
121 118 118	(1) GPS Unit (6) Antel RWA-80014 (6) Decibel 948F85T2E-M on Low Profile Platform	Verizon	(1) 1/2" (6) 1-5/8" (6) 1-5/8"	O	Existing
106	(6) Allgon 7250 on Low Profile Platform	AT&T	(6) 1-1/4" (6) 1-5/8"	I	Existing
96	(12) Decibel 844G65VTZA-SX on T-Arm Mounts	Nextel	(15) 1-5/8"	O	Existing

[a] *[I] / [O] denotes coax installed inside or outside of monopole respectively.*

The subject tower and foundation ***are adequate*** to support the above stated loads in conformance with specified requirements. [3]

6/9/06

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Connecticut.

[1] The existing and proposed loads of *Table 1* are compared to the tower's current design capacity or previous analysis.
[2] The design wind criteria are compared to the current code requirements.
[3] The tower should be re-evaluated as future loads are added or if actual loads are found different from those mentioned in *Table 1*.

22 June 2006

Honorable Adam P. Salina
Mayor, Town Berlin
240 Kensington Road
Berlin, CT 06037

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at 260 Beckley Road, Berlin, Connecticut

Dear Mr. Salina:

New Cingular Wireless PCS, LLC ("Cingular") proposes to remove and replace telecommunications antennas and associated equipment located on an existing tower at the above-referenced location. The facility is now controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067.

Proposed Modifications

Cingular proposes to add one (1) equipment cabinet inside an existing shelter and remove the existing antennas and replace them with a total of six (6) new antennas, located at an existing centerline height of approximately 152' above ground level. Cingular will remove the existing coaxial cables and replace them with twelve (12) new 1 5/8" diameter cables. It will keep six (6) of the existing tower mounted amplifiers will and add six (6) new units, located at the same height as the antennas.

In summary, the final antenna configuration at 260 Beckley Road will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

A structural evaluation has demonstrated that the tower will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete.

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.kskl.com

Statutory Considerations

The proposed work will not affect the height of the existing structure, nor will it alter the existing property boundaries. Furthermore, the proposed work will not increase noise levels at the facility's site boundary by six (6) decibels or more. Operation of additional antennas will not increase the radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the Federal Communications Commission.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council (CSC) as required by the Regulations of Connecticut State Agencies (RCSA), Section 16-50j-73. Please accept this letter as notification to the Town of Berlin under Section 16-50j-73 that the proposed work constitutes an exempt modification pursuant to RCSA Section 16-50j-72(b)(2).

Should you have any questions or require additional information about the plans or the CSC's procedures, please do not hesitate to contact me (215.790.1050 ext. 138) or Mr. Derek Phelps, Executive Director, Connecticut Siting Council (860.827.2935).

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

1030 New Britain Avenue, West Hartford, CT

Summary Sheet
Project Location Map
Site Plan and Elevation
Structural Analysis
Elected Official Letter

CINGULAR WIRELESS
Proposed Modifications

Site Address:	1030 New Britain Avenue, West Hartford, CT; *Project Location Map* attached
Site Owner:	Ten Thirty Tower Company, LLC
Type of Existing Facility:	180' lattice tower and an equipment shelter within a compound that measures 78' x 50'; compound surrounded by a chain link fence
Antenna Configuration:	Center line –180' above ground level; remove existing Allgon 7250 antennas and replace with six (6) Powerwave 7770 units; *specification attached*
TMA Configuration:	Existing units to be replaced with twelve (12) new LGP 214nn units; *specification attached*
Coaxial Cables:	Six (6) existing 1 5/8"diameter coaxial cables to remain and add six (6) new cables of the same dimension
Other Work:	Add one (1) Ericsson RBS 3206 equipment cabinet inside and existing shelter

Power Density:

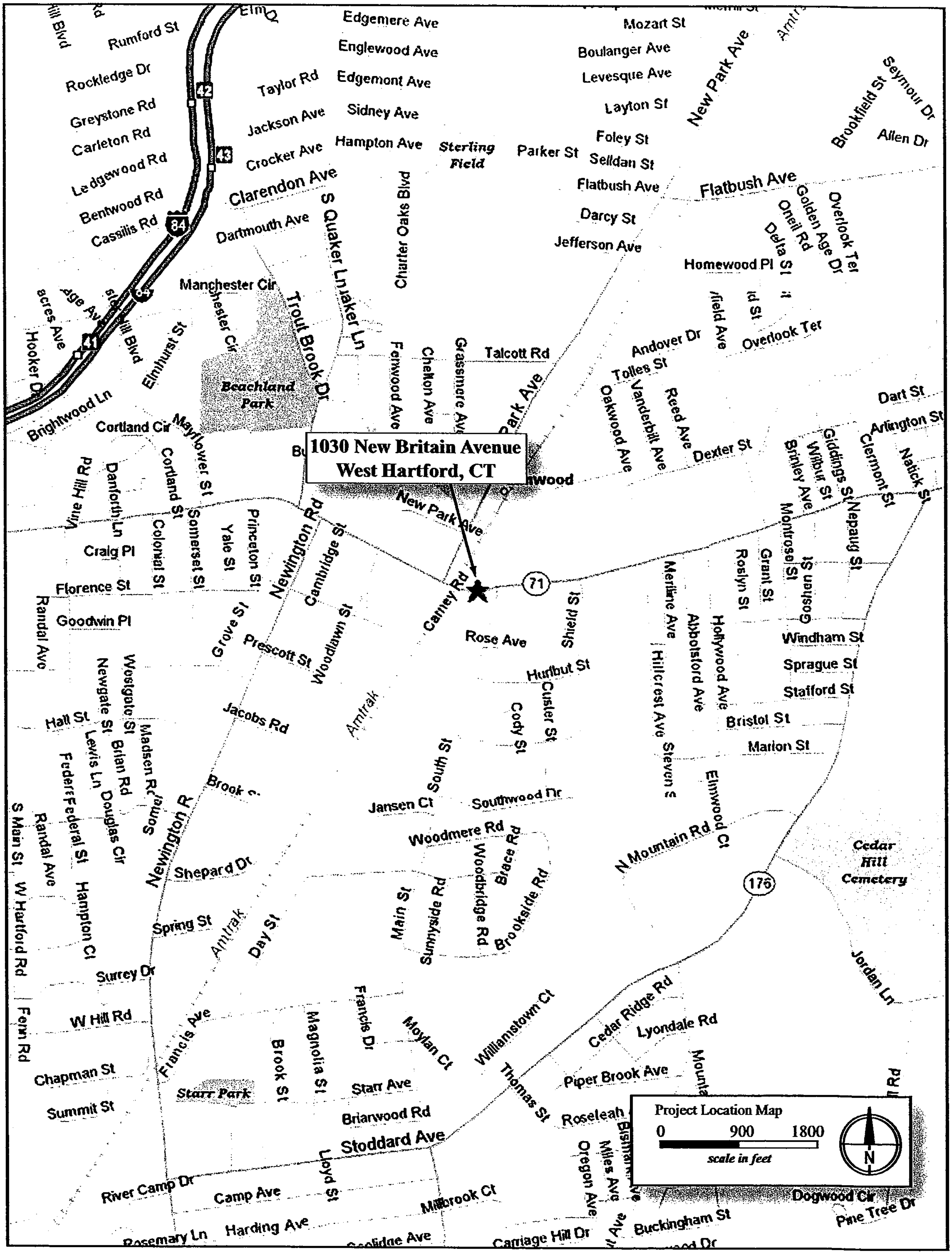
As the table demonstrates, the cumulative worst-case exposure would be within the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the facility would be within applicable standards.

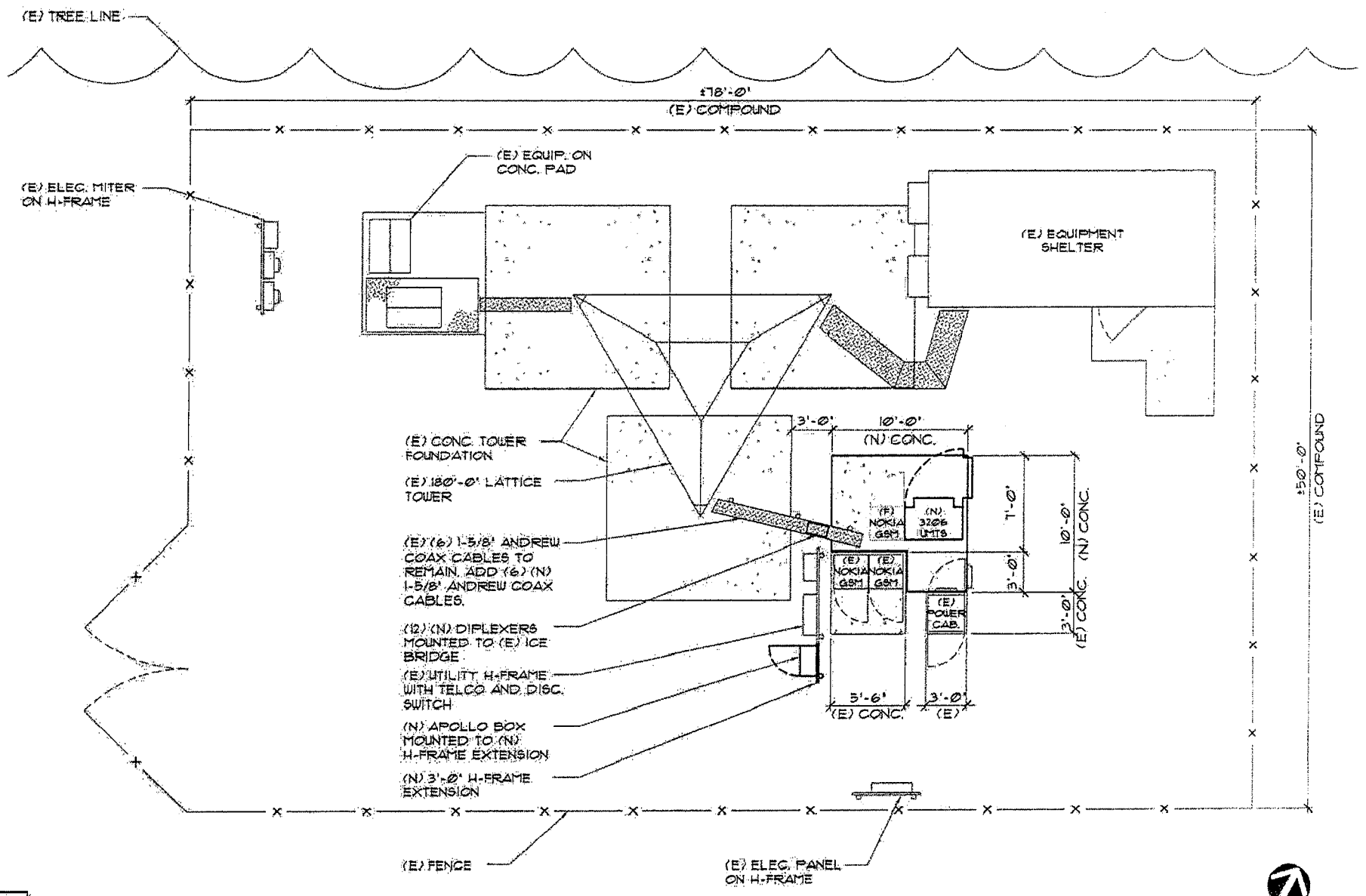
Power Density Table attached.

Structural Analysis: *Structural Analysis* attached.

Addition of the UMTS broadcasts will not increase the exposure to radio frequency electromagnetic energy, measured at the base of the tower, to or above the standard adopted by the state of Connecticut and the Federal Communications Commission. The table below summarizes the cumulative results for a point of interest at the tower's base of the "worst-case" exposure calculations resulting from all carriers co-located on this tower. The calculations are in accordance with FCC OET Bulletin No. 65 (1997), and for simplicity an assumption is made that the antennas are all pointed down, thus focusing their energy at the tower's base.

Site # 5259 / 2278								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu W/cm^2$)	FCC Limit ($\mu W/cm^2$)	Percent of Limit (%)
Cingular UMTS	180	1935.0	1	500.0	820.0	5.6	1000	0.56%
AT&T	180	1900.0	16	250.0	6560.0	44.4	1000	4.44%
T-Mobile	165	1900.0	12	250.0	4920.0	39.6	1000	3.96%
Nextel	155	851.0	12	100.0	1968.0	18.0	567	3.17%
TOTAL								**12.12%**


1030 New Britain Avenue
West Hartford, CT
Project Location Map
0
900
1800
scale in feet
N
Rumford St
Rockledge Dr
Greystone Rd
Carleton Rd
Ledgewood Rd
Bentwood Rd
Cassilis Rd
Edgemere Ave
Englewood Ave
Edgemont Ave
Sidney Ave
Hampton Ave
Taylor Rd
Jackson Ave
Crocker Ave
Clarendon Ave
Dartmouth Ave
Sterling Field
Parker St
Mozart St
Boulanger Ave
Levesque Ave
Layton St
Foley St
Selldan St
Flatbush Ave
Darcy St
Jefferson Ave
New Park Ave
Brookfield St
Seymour Dr
Allen Dr
Golden Age Dr
Overlook Ter
Oneil Rd
Delta St
Homewood Pl
S Quaker Ln
Charter Oaks Blvd
Manchester Cir
Trout Brook Dr
Beachland Park
Elmhurst St
Hooker Dr
Brightwood Ln
Cortland Cir
Mayflower St
Fernwood Ave
Chelton Ave
Grassmere Ave
Talcott Rd
Park Ave
Andover Dr
Tolles St
Overlook Ter
Oakwood Ave
Vanderbilt Ave
Reed Ave
Dexter St
Dart St
Arlington St
Brinley Ave
Wilbur St
Giddings St
Clermont St
Natick St
Vine Hill Rd
Danforth Ln
Cortland St
Somerset St
Craig Pl
Colonial St
Yale St
Princeton St
Newington Rd
Cambridge St
New Park Ave
Florence St
Goodwin Pl
Randal Ave
Grove St
Prescott St
Woodlawn St
Carney Rd
71
Rose Ave
Shield St
Meriline Ave
Abbotsford Ave
Hollywood Ave
Roslyn St
Grant St
Montrose St
Goshen St
Nepaug St
Windham St
Sprague St
Stafford St
Bristol St
Marion St
Hurlbut St
Custer St
Cody St
Hillcrest Ave
Stevens St
Elmwood Ct
Hall St
Newgate St
Westgate St
Levis Ln
Brian Rd
Madsen Rd
Jacobs Rd
Amtrak
South St
Jansen Ct
Southwood Dr
Brook St
Federal St
Douglas Cir
Randal Ave
S Main St
W Hartford Rd
Hampton Ct
Newington Rd
Shepard Dr
Woodmere Rd
Woodbridge Rd
Brace Rd
Brookside Rd
Sunnyside Rd
Main St
N Mountain Rd
175
Cedar Hill Cemetery
Spring St
Day St
Surrey Dr
W Hill Rd
Fern Rd
Francis Ave
Brook St
Magnolia St
Francis Dr
Moylan Ct
Williamstown Ct
Cedar Ridge Rd
Lyondale Rd
Jordan Ln
Chapman St
Starr Park
Starr Ave
Thomas St
Piper Brook Ave
Summit St
Brianwood Rd
Stoddard Ave
Roseleah
Lloyd St
Oregon Ave
Miles Ave
River Camp Dr
Camp Ave
Millbrook Ct
Dogwood Cir
Pine Tree Dr
Buckingham St
Rosemary Ln
Harding Ave
Carriage Hill Dr



1 EXISTING SITE PLAN
1"=10'-0"

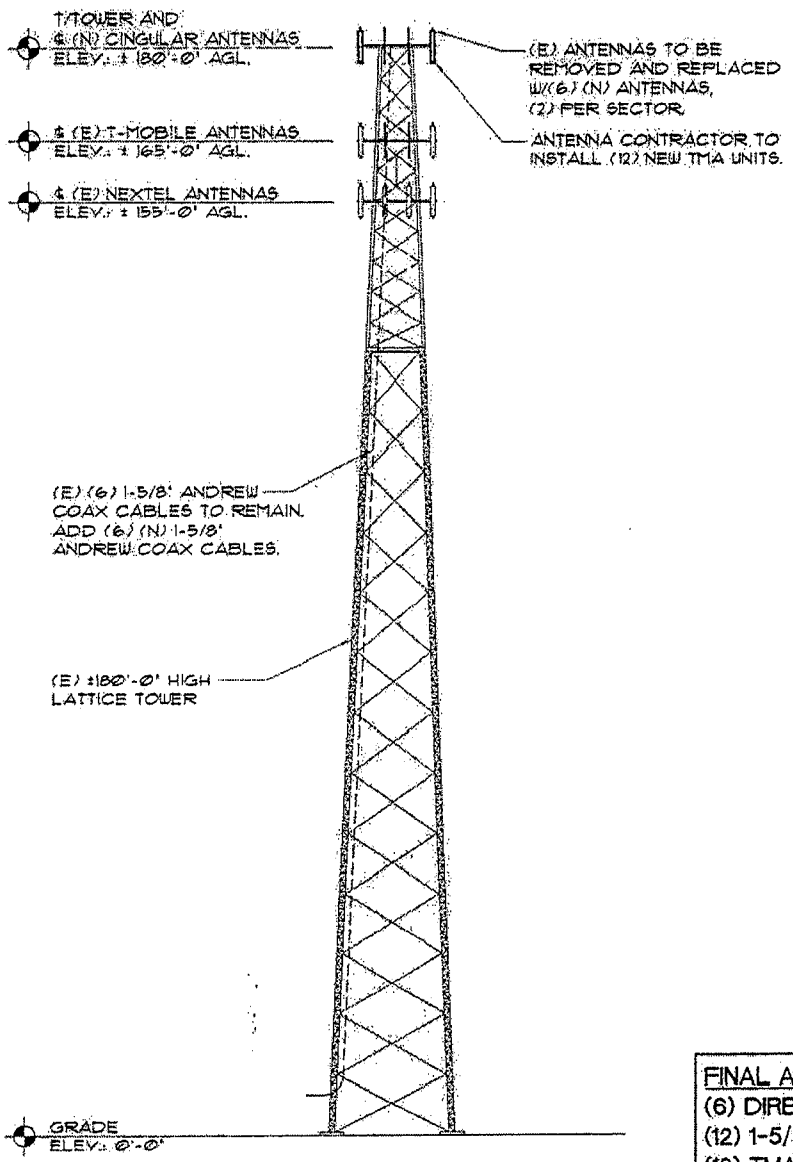
cingular WIRELESS | ERICSSON

CH2M HILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
2	06-21-06	ISSUED FOR CSC SUBMITTAL	RR	JZ	JZ
1	06-12-06	SCOPING REVIEW	ML	JZ	JZ

SCALE: 1"=10'-0" | CHECKED BY: JZ | DRAWN BY: ML

CINGULAR WIRELESS
SITE #: 2278
SITE NAME: WEST HARTFORD-ELMWOOD
1030 NEW BRITAIN AVE WEST HARTFORD, CT 06110
DRAWING NUMBER: 2278 | REV: 2



FINAL ANTENNA CONFIGURATION
(6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
(12) 1-5/8" DIA. COAX CABLES
(12) TMAS

1 TOWER ELEVATION
1"=30'-0"

cingular WIRELESS | ERICSSON

CH2M HILL
8819 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
2	06-21-06	ISSUED FOR CSC SUBMITTAL	RR	JZ	JZ
1	06-12-06	SCOPING REVIEW	ML	JZ	JZ

SCALE: 1"=30'-0" | CHECKED BY: JZ | DRAWN BY: ML

CINGULAR WIRELESS
SITE #: 2278
SITE NAME: WEST HARTFORD-ELMWOOD
1030 NEW BRITAIN AVE WEST HARTFORD, CT 06110
DRAWING NUMBER: 2278 | REV: 0

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF EXISTING 180' SELF SUPPORTING LATTICE TOWER FOR NEW ANTENNA ARRANGEMENT

Cingular Site #2278
1030 New Britain Avenue
West Hartford, Connecticut

prepared for

CH2MHILL
8619 West Bryn Mawr, Suite 615
Chicago, IL 60631

cingular WIRELESS
Cingular Wireless
580 Main Street
Bolton, MA 01740

prepared by

URS
URS CORPORATION
500 ENTERPRISE DR, SUITE 3B
ROCKY HILL, CT 06067
TEL. 860-529-8882

36922973.00008
CH2-063

June 19, 2006

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 180' self-supporting lattice tower structure located at 1030 New Britain Avenue in West Hartford, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for a wind velocity of 80 mph (fastest mile) and 69 mph (fastest mile) concurrent with ½" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report. The proposed Cingular Wireless modification is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Remove (3) existing 7250.03 antennas and install (6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA's on the existing platform with (6) existing 1 5/8" coax cables and (6) new 1 5/8" coax cables.	**Cingular Wireless (Proposed)**	**@ 180'**

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 structurally adequate with the wind load classification specified above and all the existing and proposed antenna loading.**

This analysis is based on:

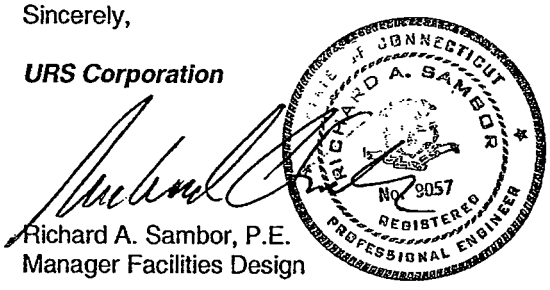
1) The tower structure's theoretical capacity, not including any assessment of the condition of the tower.
2) Tower geometry and structural member sizes taken from original construction drawings (Pirod File A-114804) prepared by Pirod Inc., dated June 10, 1998.
3) Antenna and mount configuration as specified on the following page of this report.

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 as well as the physical condition of the tower and connections. Notify the engineer in writing immediately if any of the information in this report is found to be other than specified.

If you should have any questions, please call.

Sincerely,

URS Corporation



Richard A. Sambor, P.E.
Manager Facilities Design

RAS/jek

cc: AA, DR, IA – URS
CF/Book

2. INTRODUCTION

The subject tower is located at 1030 New Britain Avenue in West Hartford, Connecticut. The structure is a 180' self-supporting lattice tower designed and manufactured by Pirod, Inc.

The tower geometry and structure member sizes were taken from original construction drawings (Pirod File A-114804) prepared by Pirod Inc., dated June 10, 1998.

The inventory is summarized in the table below:

Antenna Type	*Carrier*	*Mount*	*Antenna Centerline Elevation*	*Cable*
(6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA' s	**Cingular (proposed)**	Low-Profile Platform	**180'**	**(6) new 1 5/8" coax cables and (6) existing 1 5/8" coax cables (Leg Bundled)**
(12) EMS RR-90-17-02DP Antennas	T-mobile (existing)	(3) T-Arms	165'	(24) 1 5/8" coax cables (Leg Bundled)
(12) DB844H90 Antennas	Nextel (existing)	(3) T-Arms	155'	(12) 1 5/8" coax cables (Leg Bundled)

This structural analysis of the communications tower was performed by URS Corporation (URS) for CH2MHill/Cingular Wireless. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. This analysis was conducted to evaluate 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

The structural analysis was done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-F—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction—Allowable Stress Design (ASD).

The analysis was conducted using RISA Tower 4.5. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 80 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 69 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

Please note that wind pressure is a function of velocity squared. Under Load Condition 2, a 25 percent reduction in wind pressure is allowed by code to account for the unlikelihood of the full wind pressure and ice load occurring at the same time. The same results may be achieved by utilizing a lower wind pressure without taking the 25 percent reduction, as shown above.

The TIA/EIA standard permits a one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For the purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

4. FINDINGS AND EVALUATION

Stresses on the lattice tower structure were evaluated to compare with allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were below the allowable stresses. Detailed analysis and calculations for the proposed load condition are provided in section 6 of this report. No further analysis was conducted on the anchor bolts and foundation since the forces calculated were below the original design.

5. CONCLUSIONS

The results of the analysis indicate that the tower structure is in compliance with the proposed loading conditions. **The tower and its foundation are structurally adequate under the wind load classification specified above and the proposed antenna loadings.**

Limitations/Assumptions:

This report is based on the following:

1. Tower inventory as listed in this report.
2. Tower is properly installed and maintained.
3. All members are as specified in the original design documents and are in good condition.
4. All required members are in place.
5. All bolts are in place and are properly tightened.
6. Tower is in plumb condition.
7. All member protective coatings are in good condition.
8. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
9. Foundations were properly constructed to support original design loads as specified in the original design documents.
10. All coaxial cable are bundled around tower legs unless specified otherwise.

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. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

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:

After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F 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 be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

22 June 2006

Honorable Scott Slifka
Mayor, Town of West Hartford
50 S. Main Street
West Hartford, CT 06107

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at 1030 New Britain Avenue, West Hartford, Connecticut

Dear Mr. Slifka:

New Cingular Wireless PCS, LLC ("Cingular") proposes to remove and replace telecommunications antennas and associated equipment located on an existing tower at the above-referenced location. The facility is now controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067.

Proposed Modifications

Cingular proposes to add one (1) equipment cabinet inside an existing shelter and remove the existing antennas and replace them with a total of six (6) new antennas, located at an existing centerline height of approximately 180' above ground level. Cingular will keep six (6) of the existing 1 5/8" diameter coaxial cables and add six (6) more of the same dimension. It proposes to remove the existing tower mounted amplifiers and replace them with twelve (12) new units, located at the same height as the antennas.

In summary, the final antenna configuration at 1030 New Britain Avenue will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.kskl.com

A structural evaluation has demonstrated that the tower will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete.

Statutory Considerations

The proposed work will not affect the height of the existing structure, nor will it alter the existing property boundaries. Furthermore, the proposed work will not increase noise levels at the facility's site boundary by six (6) decibels or more. Operation of additional antennas will not increase the radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the Federal Communications Commission.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council (CSC) as required by the Regulations of Connecticut State Agencies (RCSA), Section 16-50j-73. Please accept this letter as notification to the Town of West Hartford under Section 16-50j-73 that the proposed work constitutes an exempt modification pursuant to RCSA Section 16-50j-72(b)(2).

Should you have any questions or require additional information about the plans or the CSC's procedures, please do not hesitate to contact me (215.790.1050 ext. 138) or Mr. Derek Phelps, Executive Director, Connecticut Siting Council (860.827.2935).

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

99 Meadow Street, Hartford, CT

Summary Sheet
Project Location Map
Site Plan and Elevation
Structural Analysis
Elected Official Letter

CINGULAR WIRELESS
Proposed Modifications

Site Address: 99 Meadow Street, Hartford, CT

Site Owner: American Tower

Type of Existing Facility: 150' high monopole and an 18'8" x 10'6" equipment shelter within a 48' x 49' compound; surrounded by chain link fence

Antenna Configuration: Center line – 137' above ground level; existing Allgon 7184 units to be replaced with six (6) Powerwave 7770 units; *specification attached*

TMA Configuration: Existing units to be replaced with twelve (12) LGP 214nn units; *specification attached*

Coaxial Cables: Nine (9) existing 1 5/8" diameter coaxial cables to remain and three (3) cables of the same dimension to be added

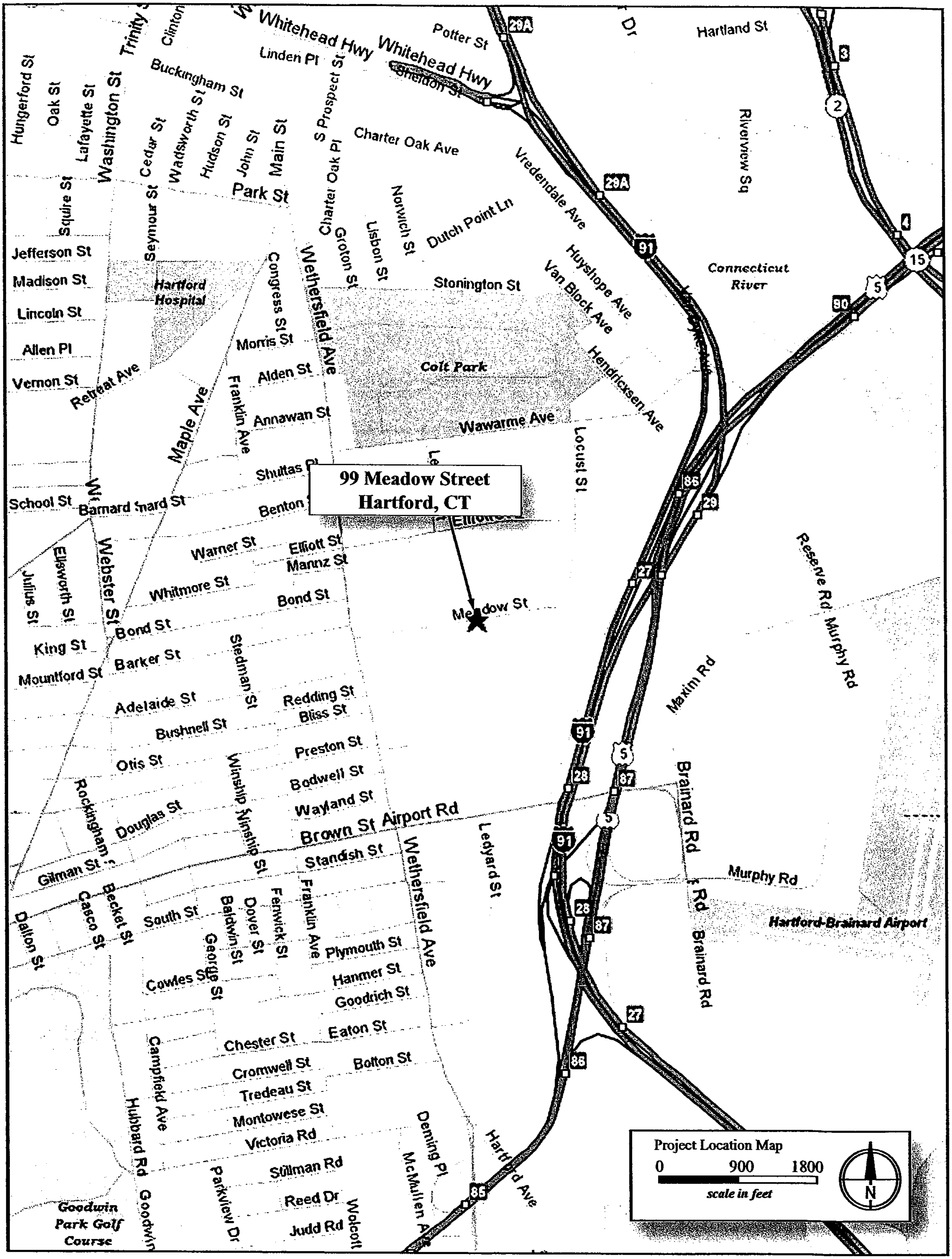
Other Work: Add one (1) Ericsson RBS 3206 equipment cabinet in the existing equipment shelter

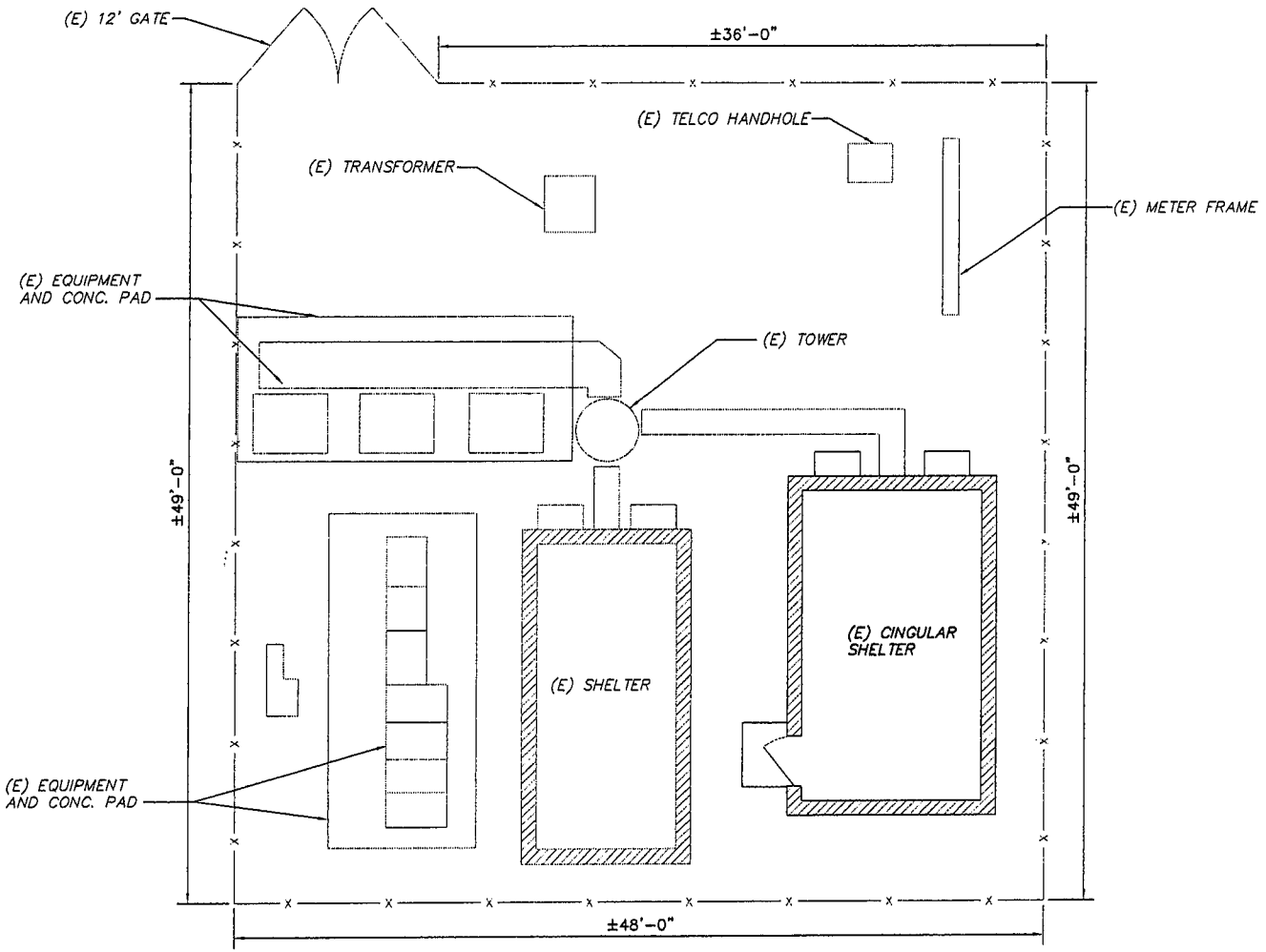
Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 37.13% of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the facility would be within applicable standards.

Site # 5127								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu W/cm^2$)	FCC Limit ($\mu W/cm^2$)	Percent of Limit (%)
Cingular UMTS	137	1935.0	1	500.0	820.0	9.6	1000	0.96%
Nextel	155	851.0	12	100.0	1968.0	18.0	567	3.17%
AT&T	137	1900.0	16	250.0	6560.0	76.6	1000	7.66%
T-Mobile	123	1900.0	4	301.8	1980.0	28.7	1000	2.87%
Sprint	98	1900.0	12	500.0	9840.0	224.7	1000	22.47%
TOTAL								**37.13%**

Structural Analysis: *Structural Analysis* attached.


99 Meadow Street
Hartford, CT
Project Location Map
0 900 1800
scale in feet
N
Colt Park
Hartford Hospital
Connecticut River
Hartford-Brainard Airport
Goodwin Park Golf Course
Wethersfield Ave
Brown St
Airport Rd
Meadow St
Maple Ave
Webster St
Main St
Park St
Whitehead Hwy
Charter Oak Ave
Wawarme Ave
Brainard Rd
Murphy Rd
Reserve Rd
Maxim Rd
Ledyard St
Hartford Ave



COMPOUND LAYOUT

SCALE: 1" = 10'-0"

TRUE

LATITUDE: 41° 44' 35.5"
LONGITUDE: 72° 40' 03.1"

cingular

CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
6300 LEGACY DRIVE
PLANO, TX 75024

CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60631

infinigy engineering
300 GREAT OAKS BLVD.
SUITE 312
ALBANY, NY 12203
OFFICE: (518) 690-0790
FAX: (518) 690-0793
185-041

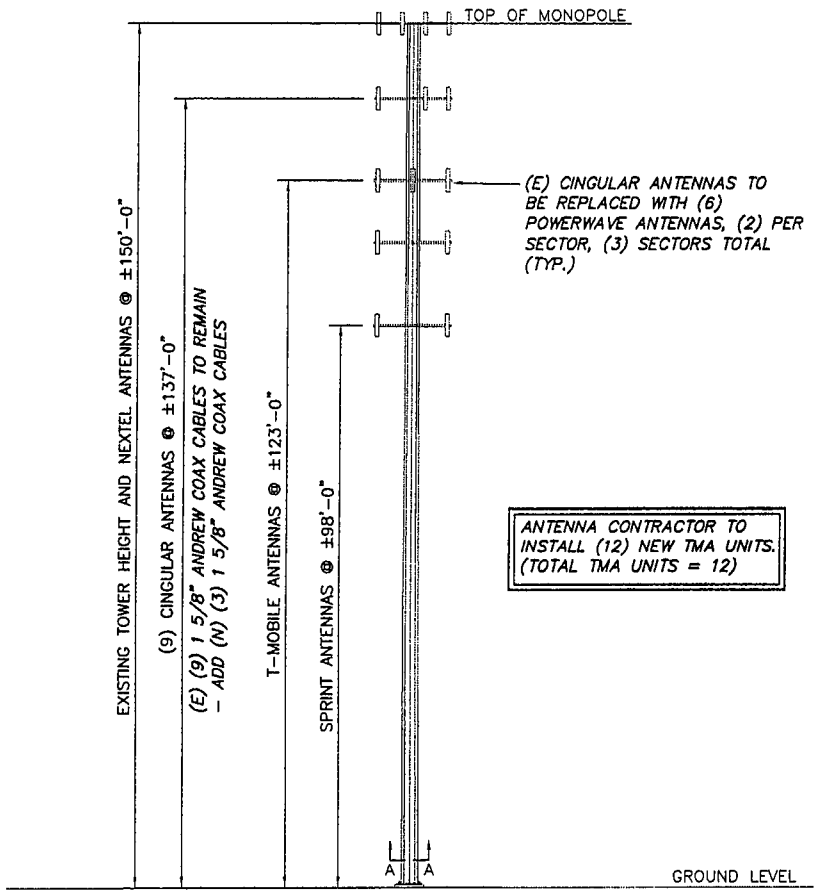
SITE NAME: I-91 - ROUTE 5 SPLIT

SITE NUMBER: 5127

99 MEADOW STREET
HARTFORD, CT 06101

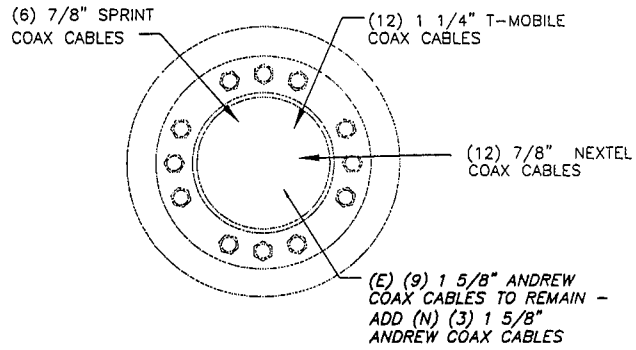
NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
4	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/18/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/24/06		DAD	CJW	CJW

SITE NUMBER
5127



TOWER ELEVATION

SCALE: 1" = 30'-0"



SECTION VIEW

LATITUDE: 41° 44' 35.5"
LONGITUDE: 72° 40' 03.1"

cingular
CINGULAR WIRELESS
580 MAIN STREET
BOLTON, MA 01740

ERICSSON
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ALBANY, NY 12203
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FAX: (518) 690-0793
185-041

SITE NAME: I-91 – ROUTE 5 SPLIT
SITE NUMBER: 5127
99 MEADOW STREET
HARTFORD, CT 06101

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
4	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/18/06	MISC. REVISIONS	MAK	CJW	CJW
2	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/24/06		DAD	CJW	CJW

SITE NUMBER
5127

AMERICAN TOWER

302468-PAT
6/01/2006

Level 1 Structural Evaluation [1]		
ATC Site Number & Name	**302468, Petro Lock**	**Engineering ID: 26392011**
Cingular Site Number & Name	**CT 5127, I-91 Route 5 Split**	
Site Address	99 Meadow Street Hartford, CT 06114 Hartford County	
Tower Description	**148 ft FWT Monopole**	
Standards & Codes [2]	ANSI/TIA/EIA-222-F (1996) **80 mph w/ 0" radial ice** **69.3 mph w/ ½" radial ice**	2003 International Building Code **100 mph w/ 0" radial ice**

Table 1: Existing and Proposed Antenna Configuration

HEIGHT *(Ft)*	ANTENNA	CARRIER	COAX	[I]/[O] [a]	STATUS
153	(12) 48" x 12" Panels on Platform w/ Handrails	Nextel	(12) 1-5/8"	I	Existing
135	(3) Allgon 7184.14 on Platform w/ Handrails	Cingular	--	–	Existing
135	**(6) Powerwave 7770** **(12) Powerwave LGP2140X** **on Platform w/ Handrails**	**Cingular**	**(12) 1-5/8"**	**I**	**Proposed**
123	(9) EMS RR65-18-02DP on T-Arm Mounts	T-Mobile	(18) 1-5/8"	I	Existing
98	(9) Decibel 980F65T4E-M on Low Profile Platform	Sprint	(18) 1-1/4"	I	Existing
20	(1) Lucent 407517689 GPS on Side Arm	Sprint	(1) 1/2"	O	Existing

[a] *[I] / [O] denotes coax installed inside or outside of monopole respectively.*

The subject tower and foundation ***are adequate*** to support the above stated loads in conformance with specified requirements. [3]

STATE OF CONNECTICUT
RAPHAEL I. MOHAMED
No. 25713

6/1/06

Raphael I. Mohamed, P.E.
Engineering Manager

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Connecticut.

[1] The existing and proposed loads of *Table 1* are compared to the tower's current design capacity or previous analysis.
[2] The design wind criteria are compared to the current code requirements.
[3] The tower should be re-evaluated as future loads are added or if actual loads are found different from those mentioned in *Table 1*.

AMERICAN TOWER CORPORATION
400 Regency Forest Drive, Cary, NC 27511 ▲ ph: 919-468-0112 ▲ fax: 919-468-8522

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

22 June 2006

Honorable Eddie A. Perez
Mayor, City of Hartford
550 Main Street
Hartford, CT 06103

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at 99 Meadow Street, Hartford, Connecticut

Dear Mr. Perez:

New Cingular Wireless PCS, LLC ("Cingular") proposes to remove and replace telecommunications antennas and associated equipment located on an existing tower at the above-referenced location. The facility is now controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067.

Proposed Modifications

Cingular proposes to add one new equipment cabinet inside an existing equipment shelter. It plans to remove the existing antennas and replace them with a total of six (6) new antennas, located at an existing centerline height of approximately 137' above ground level. Cingular will keep nine (9) existing 1 5/8" diameter coaxial cables and add three (3) more of the same dimension. The existing tower mounted amplifiers will be removed and replaced with twelve (12) new units, located at the same height as the antennas.

In summary, the final antenna configuration at 99 Meadow Street will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

A structural evaluation has demonstrated that the tower will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete.

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.ksk1.com

Statutory Considerations

The proposed work will not affect the height of the existing structure, nor will it alter the existing property boundaries. Furthermore, the proposed work will not increase noise levels at the facility's site boundary by six (6) decibels or more. Operation of additional antennas will not increase the radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the Federal Communications Commission.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council (CSC) as required by the Regulations of Connecticut State Agencies (RCSA), Section 16-50j-73. Please accept this letter as notification to the City of Hartford under Section 16-50j-73 that the proposed work constitutes an exempt modification pursuant to RCSA Section 16-50j-72(b)(2).

Should you have any questions or require additional information about the plans or the CSC's procedures, please do not hesitate to contact me (215.790.1050 ext. 138) or Mr. Derek Phelps, Executive Director, Connecticut Siting Council (860.827.2935).

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

Specifications for Proposed New Equipment

Ericsson RBS Equipment Cabinet
Powerwave 7770 Antenna
Powerwave LGP 214nn Tower Mounted Amplifier

3 Dimensions

This section describes the physical characteristics of the RBS: dimensions, weight, and color.

Table 1 The RBS Dimensions

Unit	Dimensions (mm)
Height	1626
Width	1300
Depth	710
Depth including door	926

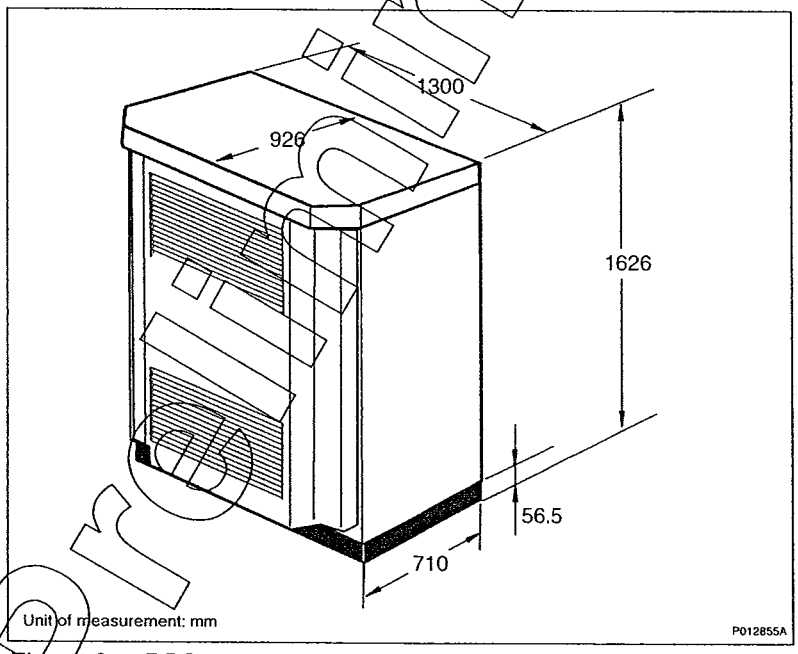

Figure 2 RBS 3106 Dimensions

The RBS weight is shown in the table below.

Table 2 The RBS Weight

Unit	Weight (kg)
RBS fully equipped excluding batteries	560
RBS fully equipped including batteries	850
RBS fully equipped including batteries and future expansion of hardware (not yet available)	875
Installation frame	12

The RBS color is shown in the table below.

Table 3 The RBS Color

Color	Color Standard
Grey	RAL 7035
Green	NCS 8010–G 10 Y

Dual Broadband Antenna

90° 1.4 m MET Antenna

806-960/1710-2170 MHz

Part Number: 7770.00 | Horizontal Beamwidth: 90° Gain: 13.5/16 dBi | Electrical Downtilt: Adjustable Connector Type: 7/16 female

The Powerwave dual band dual polarized broadband antenna has individual adjustable electrical downtilt per band (upgradeable to Remote Electrical Tilt (RET). Four connector ports allow separate tilts on each frequency band and ensure the use of diversity concepts. The phase shifter technology, based on a patented sliding dielectric, minimizes intermodulation distortion and maximizes efficiency. The slant +/- 45° dual polarization system provides the independent fading signals needed for achieving top-quality coverage via diversity concepts. The Powerwave Broadband antenna design is based on a patented stacked aperture-coupled patch technology, which provides high isolation performance and a wide VSWR bandwidth. The antennas have superior radiation patterns due to a unique reflector design which provides a very small variation of the –3dB horizontal beam width over the frequency band as well as a high front-to-back ratio.

Key Benefits

- Excellent broad- and multi-band capabilities
- Polarization purity makes good diversity gain
- Excellent pattern performance and high gain over frequency
- High passive intermodulation performance
- Light, slim and robust design

Preliminary

ANTENNA SYSTEMS

BASE STATION SYSTEMS

COVERAGE SYSTEMS

Dual Broadband Antenna

806-960/1710-2170 MHz

Electrical Specifications (Preliminary)

Frequency band (MHz)	806-960		1710-2170
Gain, ± 0.5dB (dBi)	13.5		16.0
Polarization		Dual linear ±45°	
Nominal Impedance (Ohm)		50	
VSWR	1.5:1		
VSWR			1.5:1
Isolation between inputs (dB)	30		
Isolation between inputs (dB)			30
Inter band isolation (dB)		40	
Horizontal -3 dB beamwidth	85 ± 5°		85 ± 5°
Tracking, Horizontal plane, ±60° (dB)	<2.0		
Tracking, Horizontal plane, ±60° (dB)			<2.0
Electrical downtilt range (adjustable)	0° to 10°		0° to 8°
Vertical -3 dB beamwidth	14.3 ± 2.0°		6.6 ± 1°
Sidelobe suppression, Vertical 1 st upper (dB)	>17,16,15 x=0, 5, 10° MET		> 17, 16,15 x=0, 4, 8° MET
Vertical beam squint	<0.8°		<0.5°
First null-fill (dB)	<-25		<-25
Front-to-back ratio (dB)	>25		>27
Front-to-back ratio, total power (dB)	>20		>23
IM3, 2Tx@43dBm (dBc)	<-153		
IM3, 2Tx@43dBm (dBc)			<-153
IM7, 2Tx@43dBm (dBc)			<-160
Power Handling, Average per input (W)	400		250
Power Handling, Average total (W)	800		500

All specifications are subject to change without notice.
Contact your Powerwave representative for complete performance data.

Mechanical Specifications

Connector Type	4 x 7/16 DIN female
Connector Position	Bottom
Dimensions, HxWxD	1408mm x 280mm x 125mm (55"x11"x5")
Weight Including Brackets	15.8 kg (35 lbs)
Wind Load, Frontal, 42m/s Cd=1	435N (98 lbf)
Survival Wind Speed (m/s)	70 (156mph)
Lightning Protection	DC grounded
Radome Material	GRP
Radome Color	Light Gray
Mounting	Pre-mounted Standard Brackets
Packing Size	1550mm x 355mm x 255mm (61"x14"x10")

Corporate Headquarters
Powerwave Technologies, Inc.
1801 East St. Andrew Place
Santa Ana, CA 92705 USA
Tel: 714-466-1000
Fax: 714-466-5800
www.powerwave.com

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SE-187 80 Täby
Sweden
Tel: +46 8 540 822 00
Fax: +46 8 540 823 40

Main Asia Pacific Office
23 F Tai Yau Building
181 Johnston Road
Wanchai, Hong Kong
Tel: +852 2512 6123
Fax: +852 2575 4860

Powerwave technologies

COVERAGE AND CAPACITY | TECHNOLOGY LEADERSHIP | GLOBAL PARTNER | INTEGRATED SOLUTIONS | QUALITY AND RELIABILITY

D031-08208 Rev A

Tower Mounted Amplifier

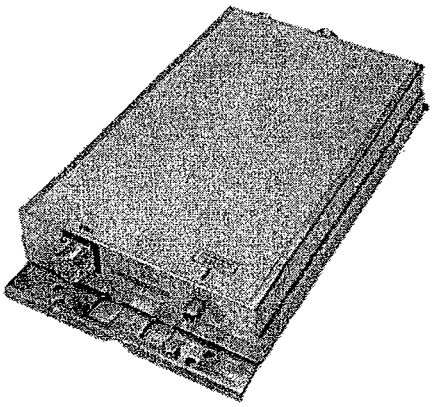
Dual Band 1900 MHz with 850 MHz Bypass

1900/850 MHZ

Part Number:	Up-link: 1850-1910 MHz	Gain: 12 dB
LGP 214nn	Down-link: 1930-1990 MHz	Noise Figure: < 1.7 dB
	Bypass: 824-894 MHz	

The Powerwave® TMA-DD 1900/850 is a dual band Tower Mounted Amplifier (TMA) to be installed near the antenna. Deployed in an AMPS, GSM, GPRS, EDGE and CDMA network it will increase capacity and coverage as well as extend the battery life time for the handsets. The TMA System will provide enhanced coverage and improved up-link signal quality. Appropriate for new rollouts by optimizing coverage with a reduced number of BTSs or as an upgrade to existing BTSs for enhancing the existing coverage.

Extended band TMA facilitates simplified logistics, especially when the frequency bands are scattered. The unit comprises of high Q band-pass filters, dual balanced low noise amplifiers with circuits for active bias, supervision, alarms and lightning protection circuit. The Powerwave patented design with all active components integrated within the filter body provides an extremely reliable, compact and lightweight TMA solution. The vented enclosure design is employed to prevent the effect of condensation, thereby guaranteeing long, reliable, maintenance-free service in all environmental conditions. These TMAs offer an easy to install, maintenance free, cost effective solution for coverage enhancement and increased quality in mobile communication networks.



Key Benefits:

- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

ANTENNA SYSTEMS

BASE STATION SYSTEMS

COVERAGE SYSTEMS

Tower Mounted Amplifier

1900/850 MHz

Technical Specifications

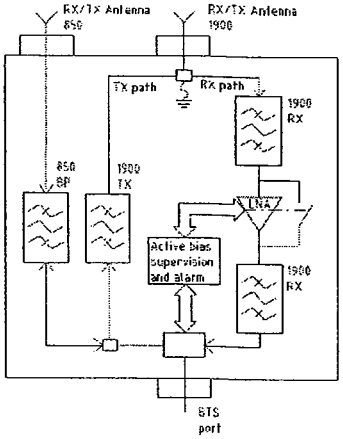
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency range, full band (60 MHz)	1930-1990
	Insertion loss* (dB)	< 0.6
	Return loss* (dB)	> 20
Intermodulation	2 Tx@x43 dBm (dBc)	<-158
Alarm Functionality	Two levels,individually supervised LNAs	
Power Consumption	@12 VDC	1.2 W

* Typical

All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

Mechanical Specifications

Size,W x H x D (without mounting plate)	235 x 366 x 66 mm (9.2 x 14.4 x 2.6 in)
Weight	6.4 kg (14.1 lbs)
Color	Off white (NCS 1502-R)
Housing	Aluminum
RF-connectors	DIN 7/16 female.
Mounting kit	Mounting kit for pole and wall is included
Temperature range	-40 °C to +65 °C (-40 °F to +149 °F)
MTBF	>1 million hours
Safety	UL 60 950
Ingress protection, IP 65	EN 60 529
Environmental	ETS 300 019
EMC	FCC Part 15



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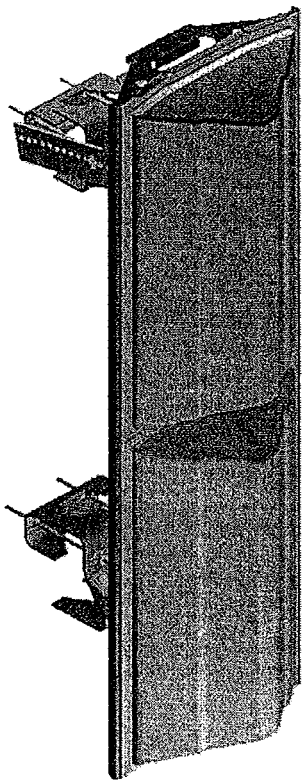
Specifications for Existing Antennas

DUO4-8670 / DUO 1417
Allgon 7250
Allgon 7184

CSS® Antenna

Directing our energies for you.

Dual Band Antenna
DUO1417-8686



86 & 86 Azimuth Beams

15 & 7 Elevation Beams

14.0 & 16.0 dBi Gain

- PCS & Cellular in One Package
- Independent Control of Electrical Beam Downtilt
- High Power Handling Capability
- Anti-Corrosion Design for Superb IM Performance
- Available With Optional Internal Dual Band Combiner

CSS Antenna, Inc. 2206-D Lakeside Blvd, Edgewood, MD 21040, Tel: 410-612-0080 Fax: 410-612-0336 www.cssantenna.com

Directing our energies for you.

Dual Band Antenna
DUO1417- 8686

Electrical Specifications

	Cellular	PCS
Frequency Range	806-900 MHz	1850-1990 MHz
Gain	14.0 dBi	16..0 dBi
Electrical Downtilt Options	0, 2, 4 or 6 Degrees	0 or 4 Degrees
VSWR	1.35:1 Maximum	1.35:1 Maximum
VSWR (with -i option)	1.40:1 Maximum	1.40:1 Maximum
Front-to-Back at Horizon	> 25 dB	> 30 dB
Upper Side Lobe Suppression	< -17 dB	< -18 dB
Elevation Beam (3-dB Points)	15 Degrees	7 Degrees
Azimuth Beam (3-dB Points)	86 Degrees	86 Degrees
Polarization	Vertical	Vertical
Impedance	50 Ohms	50 Ohms
Power Input Rating	500 CW	200 CW
Intermodulation Specification	<-110dBm at 2x10W	<-110dBm at 2x10W

Mechanical Specifications

Input Connectors (female)	Two Back Mounted 7/16 DIN (Silver Finish)
Antenna Dimensions	48.4 x 14 x 9 Inches (10.7" deep with option 'i')
Antenna Weight	20.3 lbs
Antenna Weight (w/opt. 'i')	32.0 lbs
Bracket Weight	10.5 lbs
Lightning Protection	Direct Ground
RF Distribution	Cellular: Silver Plated Brass PCS: Printed Microstrip Substrate
Radome	Ultra High-Strength Luran
Weatherability	UV Stabilized, ASTM D1925
Radome Water Absorption	ASTM D570, 0.45%
Environmental	MIL-STD-810E
Wind Survival	150 mph
Front Wind Load at 100 mph	124 lbs
Front Flat Plate Equivalent	2.54 sq-ft. (c=2)
Mounting Brackets	Fits 2.5 to 3 Inch Schedule 40 Pipe
Mechanical Downtilt Range	0-12 Degrees in 1 Degree Increments
Clamps/Bolts	Hot Dip Galvanized Steel/Stainless Steel

Ordering Information

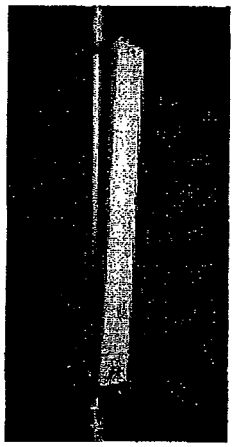
Model	Options
DUO1417- 8686-xy	x=Electrical Downtilt at 800 MHz in Degrees (0, 2, 4 or 6) y=Electrical Downtilt at 1900 MHz in Degrees (0 or 4)
DUO1417-8686-xyi	i=Dual Band Combiner included as an internal device

CSS Antenna, Inc.
Tel:410-612-0080 Fax: 410-612-0336
www.cssantenna.com

1900 & 800 MHz Dual Polarized Antenna

Electrical Specifications

	7250 (XM-1900-65-18.5i)
Gain	16.5 dBd (18.5 dBi)
Polarization	linear, dual slant 45
VSWR, 50Ω	<1.3:1 (1850 MHz to 1990 MHz)
Horizontal 3dB beamwidth	65°
Vertical 3dB beamwidth	5.5°
Custom electrical downtilts	0°, 2°, & 4°
40 degree cone Front-to-back ratio	>25 dB co-polar, >20 dB total power
Cross-polar discrimination, boresite	>20 dB
Polarization Quality Ratio	20 dB (3dB beamwidth)/10 dB (forward sector)
Suppression of first upper side lobe	>20 dB
First lower null fill	N/A
Maximum CW input power	500W total at 250W per input
Two tone intermodulation 3rd order	<-110 dBm for 2x10W (150 dBc at 2x40 dBm)
Isolation between ports	>30 dB



Mechanical Specifications

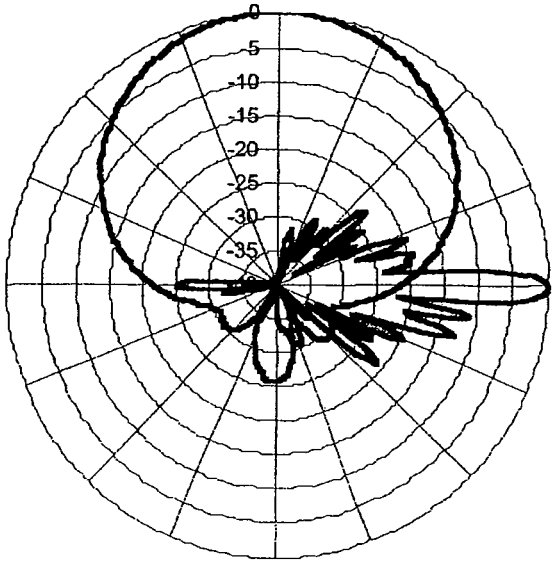
Connector	7/16 DIN bottom mount
Height	61.3" (1560 mm)
Width	6.3" (160 mm)
Depth	2.2" (55 mm)
Weight	15.4 lbs (7 kg)
Survival wind speed	156 mph (70 m/s)
Maximum wind area	2.74 sq.ft (0.25 sq.m)
Frontal wind load @100mph (C=1)	71.9 lbf (320 N)

*All feed network components DC grounded for Lightning Protection

Mounting Hardware Options for Installation	
1) Pole mount	2165.10
2)Combined pole mount/downtilt bracket	7254.10 (-0.6° to +13°)

Comments
Gain is typical within frequency band.
Beamwidths are defined using total power.
Cross-polar discrimination is defined within -3 dB beamwidth.
Front-to-back ratio is defined within 20° from the backwards direction in any plane.
Sidelobe suppression and null fill is relative to peak of main beam.
Maximum input power is total input power, divided arbitrarily between inputs.
Radome color is NCS 2502-B (RAL 7035)(gray).

For a complete list of released models pertaining to gain, electrical downtilt and connector placement, please see the quick reference guide on page 14.



Typical Horizontal and Vertical 7250.02 Patterns

A poster displaying a comparison of antenna patterns has been included at the back of the catalog.

ALLGON

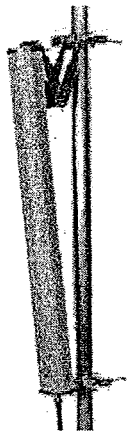
Single Band Metro Antenna

90° 1.3 m vertical polarized FET Antenna

1850-1990 MHZ

Part Number: 7184.42 | Horizontal Beamwidth: 90° Gain: 16.5 dBi / 14.4 dBd | Electrical Downtilt: 2° Connector Type: 7/16 DIN female

The Powerwave single band Metro antenna has a slim design and sophisticated electrical performance, typical of Powerwave antennas. This ensures maximum efficiency as well as stable pattern over the entire frequency range. The design relies on a micro strip PCB network. Special attention has been paid to ensure antenna pattern peak performance, making the Metro an excellent choice for optimal cell planning.



Key Benefits

- High gain performance
- Light and slim design
- Robust and reliable
- Pre-mounted brackets
- Guaranteed passive intermodulation performance

Powerwave technologies

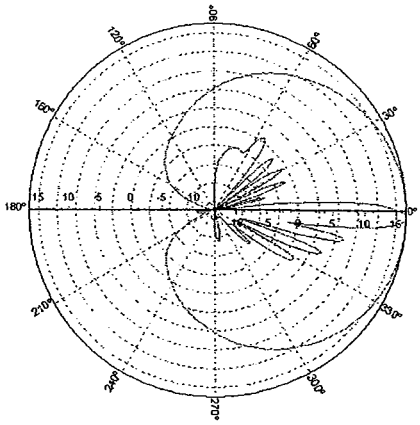
Single Band Metro Antenna

1850-1990 MHz

Electrical Specifications

Frequency Band (MHz)	1850 – 1990
Gain (dBi / dBd)	16.5 / 14.4
Polarization	Linear vertical
Nominal Impedence (Ohm)	50
VSWR (1850-1990 MHz)	< 1.3:1
Horizontal -3 dB beamwidth	90°
Electrical downtilt	2°
Vertical -3 dB beamwidth	6.5°
First upper sidelobe suppression (dB))	> 18
Front-to-back ratio, co-polar (dB)	> 27
Power Handling, Average total (W)	400
IM3, @2x43dBm (dBc)	<-146

All specifications are subject to change without notice.
Contact your Powerwave representative for complete performance data.



Typical Horizontal and Vertical 7184.42 Patterns

Mechanical Specifications

Connector Type	7/16 DIN female
Connector Position	Bottom
Dimensions, HxWxD	1300x126x80mm (4' 3"x5"x3")
Weight Including Bracket	8.7 kg (19 lbs)
Wind Load, Frontal, 42 m/s, Cd=1	181N (41 lbf)
Survival Wind Speed	70m/s (156 mph)
Lightning Protection	DC grounded
Radome Material	PVC
Radome Color	Light gray
Packing Size	1410x190x140mm (4' 7"x7"x6")
Shipping Weight	9.7 kg (21.1lbs)

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