Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

21 August 2006

Mr. Colin C. Tait, Chairman, and
Members of the Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Errata Sheet –One (1) Existing Telecommunications Tower Facility in Hartford County
Site 1: 179 Shunpike Road, Cromwell
(EM-CING-033-017-060728)

Dear Chairman Tait and Members of the Council:

Attached you will find an errata sheet for the above referenced telecommunications facility.

The Tower Elevation has been modified to show that Sprint's centerline antenna height is located at 170' above ground level.

Should you have additional questions or concerns, please do not hesitate to call me at 215.790.1050 ext. 138.

Sincerely,

Elizabeth H. Lankenau, AICP
Planner

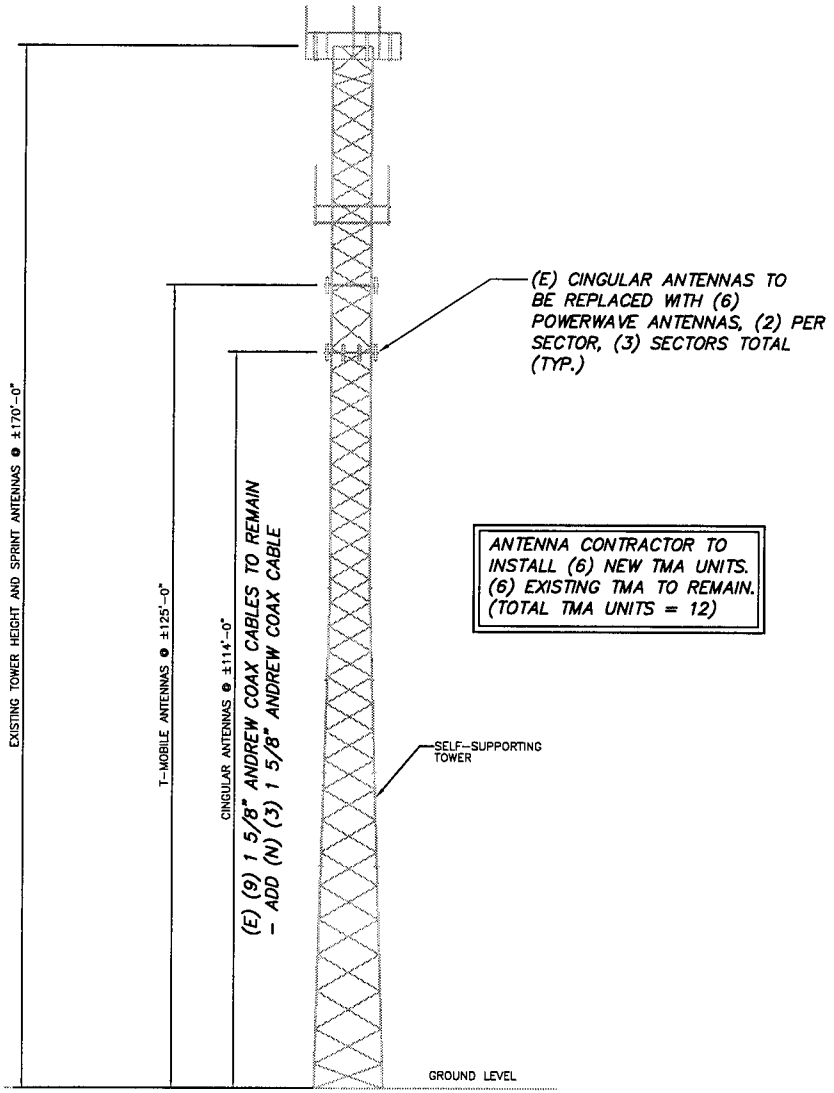
James Bennett Straw, AIA
Harvey D. Kolodner, MBA

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



TOWER ELEVATION

SCALE: 1" = 30'-0"

LATITUDE: 41° 37' 24"
LONGITUDE: 72° 40' 44"

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
185-019

SITE NAME: CROMWELL FIRE DEPT.
SITE NUMBER: 1141
179 SHUNPIKE RD
CROMWELL, CT 06416

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
4	06/07/06	MISC. REVISIONS	PHR	CJW	CJW
3	04/11/06	MISC. REVISIONS	PHR	CJW	CJW
2	04/10/06	MISC. REVISIONS	PHR	CJW	CJW
1	03/28/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/23/06		PHR	CJW	CJW

SITE NUMBER
1141

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

EM-CING-033-017-060728

26 July 2006

Mr. Colin C. Tait, Chairman, and
Members of the Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification –One (1) Existing Telecommunications Tower Facilities in Hartford County
Site 1: 179 Shunpike Road, Cromwell
Site 2: Willis Street, Bristol

Dear Chairman Tait 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:

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 Paul C. Beaulieu, 1st Selectman, Town of Cromwell
Honorable William T. Stortz, Mayor, City of Bristol

179 Shunpike Road, Cromwell, CT

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

CINGULAR WIRELESS
Proposed Modifications

Site Address: 179 Shurpike Road, Cromwell, CT; *Project Location Map* attached

Site Owner: Cromwell Fire Department

Type of Existing Facility: 170' lattice tower and a 19'4" x 10'9" equipment shelter within a larger compound

Antenna Configuration: Center line – 114' above ground level; remove existing CSS DUO4- 8670 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: Nine (9) existing 1 5/8"cables to remain and add three (3) new cables of the same dimension

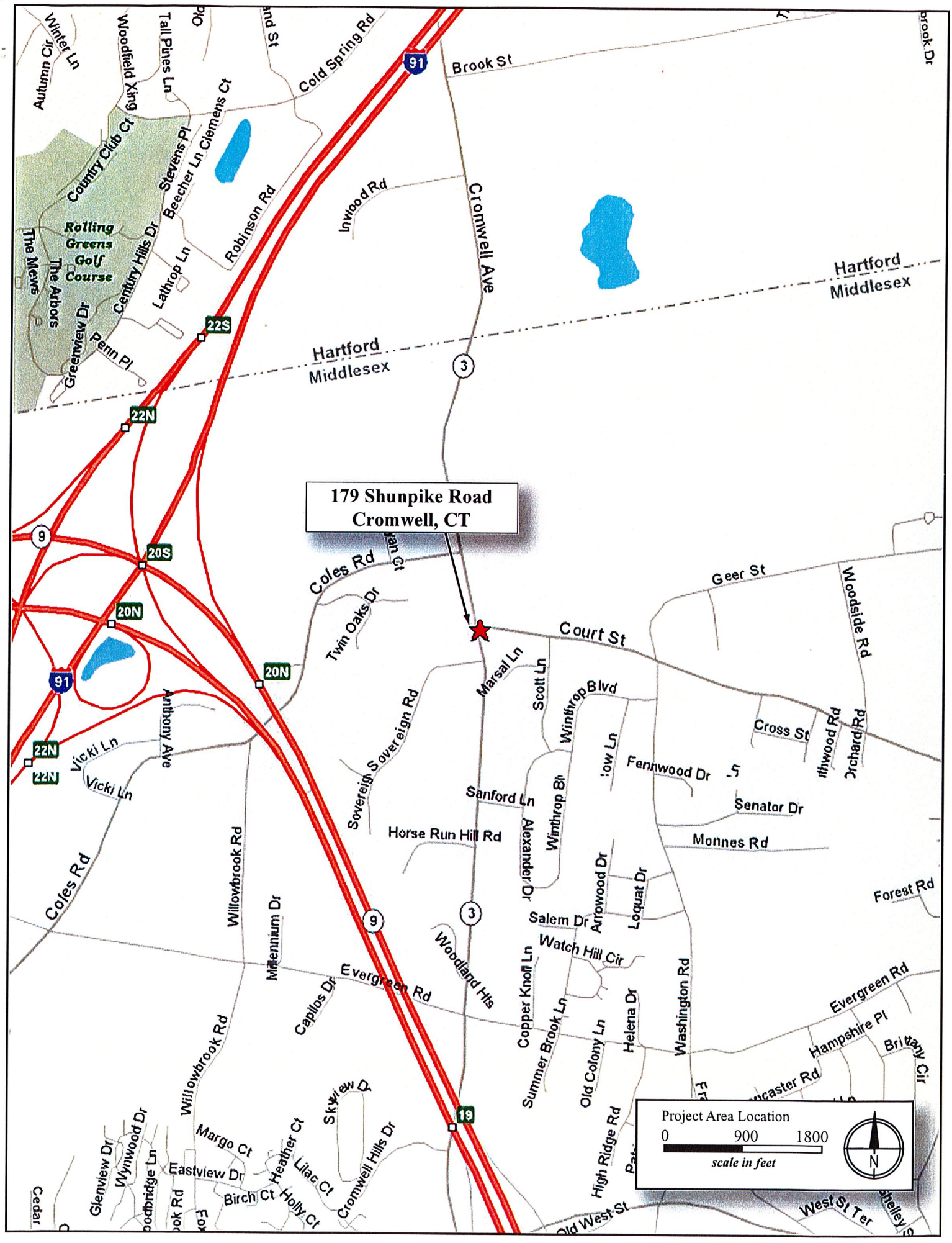
Other Work: Add one (1) Ericsson RBS 3206 equipment cabinet inside existing equipment shelter

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 16.01% 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 # 1141								
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	114	1935.0	1	500.0	820.0	13.8	1000	1.38%
Cromwell	142	-	-	-	-	-	-	1.30%
Sprint	170	1900.0	11	305.8	5517.3	41.9	1000	4.19%
AT&T	160	1900.0	8	100.0	1312.0	11.2	1000	1.12%
T-Mobile	125	1900.0	6	179.0	1761.2	24.7	1000	2.47%
Cingular 800	114	880.0	2	296.0	970.9	16.4	587	2.79%
Cingular 1900	114	1900.0	2	497.0	1630.2	27.5	1000	2.75%
TOTAL								**16.01%**

Structural Analysis: *Structural Analysis* attached.


179 Shunpike Road
Cromwell, CT
Hartford
Middlesex
Hartford
Middlesex
Project Area Location
0 900 1800
scale in feet
N
Rolling Greens Golf Course
Country Club Ct
Stevens Pl
Beecher Ln
Clemens Ct
Robinson Rd
Inwood Rd
Cromwell Ave
Brook St
Cold Spring Rd
Woodfield Xing
Tall Pines Ln
Autumn Ln
Winter Ln
Century Hills Dr
Lathrop Ln
The Mews
The Arbors
Greenview Dr
Penn Pl
Coles Rd
Twin Oaks Dr
Court St
Geer St
Woodside Rd
Marsal Ln
Scott Ln
Winthrop Blvd
Sovereign Sovereign Rd
Cross St
Fenwood Dr
Senator Dr
Monnes Rd
Horse Run Hill Rd
Sanford Ln
Alexander Dr
Arrowood Dr
Loquat Dr
Forest Rd
Salem Dr
Watch Hill Cir
Woodland Hts
Copper Knoll Ln
Summer Brook Ln
Old Colony Ln
Helena Dr
Washington Rd
Evergreen Rd
Hampshire Pl
Brittany Cir
Lancaster Rd
High Ridge Rd
Old West St
West St Ter
Willowbrook Rd
Millennium Dr
Capilos Dr
Anthony Ave
Vicki Ln
Skyview Dr
Cromwell Hills Dr
Margo Ct
Eastview Dr
Heather Ct
Lilac Ct
Birch Ct
Holly Ct
Glenview Dr
Wynwood Dr
Woodbridge Ln
Cedar
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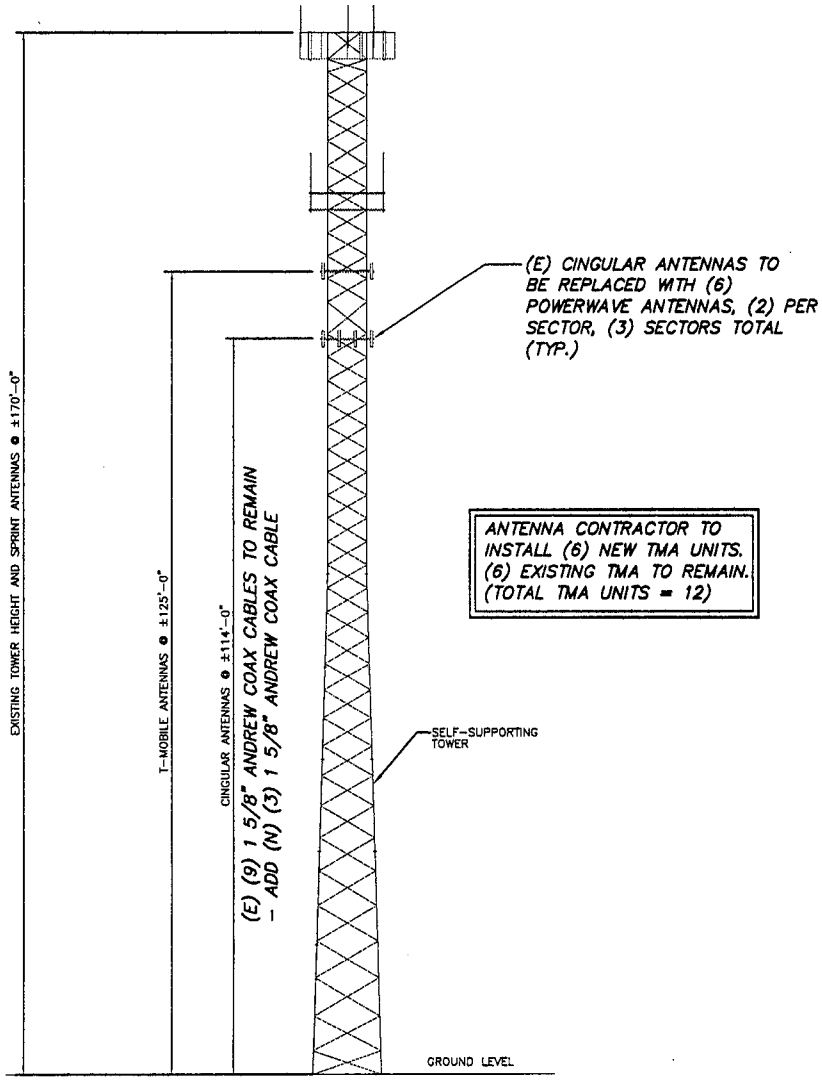

TOWER ELEVATION

SCALE: 1" = 30'-0"

LATITUDE: 41° 37' 24"
LONGITUDE: 72° 40' 44"

cingular

CINGULAR WIRELESS
580 MAIN STREET
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SITE NAME: CROMWELL FIRE DEPT.
SITE NUMBER: 1141
179 SHUNPIKE RD
CROMWELL, CT 06416

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
4	06/07/06	MISC. REVISIONS	PHR	CJW	CJW
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1	03/28/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/23/06		PHR	CJW	CJW

SITE NUMBER
1141

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF EXISTING 170' SELF SUPPORTING LATTICE TOWER FOR NEW ANTENNA ARRANGEMENT

Cingular Site #1141
179 Shunpike Road
Cromwell, 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

36922915.00008
CH2-005

July 24, 2006

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3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS
4. FINDINGS AND EVALUATION
5. CONCLUSIONS AND RECOMMENDATIONS
6. DRAWINGS AND DATA

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- RISA TOWER FEEDLINE DISTRIBUTION
- RISA TOWER DETAILED OUTPUT
- ANCHOR BOLT ANALYSIS
- FOUNDATION ANALYSIS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 170' self supporting lattice tower located at 179 Shunpike Road in Cromwell, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for wind velocity of 85 mph (fastest mile) and 74 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 modification is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Remove: **(9) CSS DUO1417-8686 existing antennas** **Install:** **(6) Powerwave 7770.00 antennas and** **(12) Powerwave LGP21401 TMA's on** **(3) existing T-frames with** **(3) new 1 5/8" coax cables and (9) existing 1 5/8" coax cables**	**Cingular (Proposed)**	**@ 113'**

The results of the analysis indicate that the tower structure, anchor bolts and tower foundation are in compliance with the proposed loading conditions. **Therefore, the tower is 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, structural member sizes, and Foundation information taken from a tower report prepared by PiROD Inc., ENG. File No. A-116398, dated November 19, 1999.

3) Tower reinforcement information taken from report prepared by Maguire Group Inc., dated July 15, 2002.

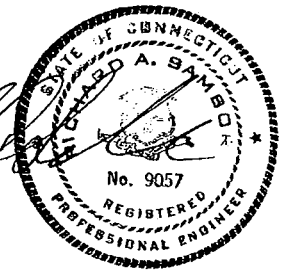
4) Antenna and mount configuration as specified on the following page of this report.

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, CF/Book – URS

2. INTRODUCTION

The subject tower is located at 179 Shunpike Road in Cromwell, Connecticut. The structure is a 170' self supporting lattice tower designed and manufactured by PiROD Inc.

The inventory is summarized in the table below:

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
(1) 9' Whip antenna	Town (existing)	Pipe to Pipe Kit	178	(1) 1 5/8" coax cable
(2) 21' Whip antennas	Town (existing)	9 Arm Halo Mount	178'	(1) 7/8" coax cable (1) 1 1/4" coax cable
(1) Mobile Mark OD12-2400 antenna (1) Breezecom TMA	Town (existing)	Pipe to Pipe Kit	175'	(1) 3/8" coax cable
(1) PD458-2 antenna	Town (existing)	9 Arm Halo Mount	175'	(1) 7/8" coax cable
(2) 10' Whip antennas	Town (existing)	9 Arm Halo Mount	174'	(2) 7/8" coax cables
(1) Tx Rx 101-90-08 antenna	Town (existing)	9 Arm Halo Mount	173'	(1) 1 1/4" coax cable
(6) Decibel 950G65VTZE-M antennas	Sprint (existing)	9 Arm Halo Mount	168'	(6) 1 5/8" coax cables
(1) Breezecom SU-RA-HP-2.4 antenna	Town (existing)	9 Arm Halo Mount	168'	(1) 3/8" coax cable
(9) Allgon 7184.14 antennas	Cingular Blue (existing)	T-Frame	160'	(9) 1 5/8" coax cables
(1) 21' Whip antenna	Town (existing)	20' Platform	144'	(1) 1/2" coax cable
(1) 17' Whip antenna	Town (existing)	20' Platform	142	(1) 1/2" coax cable
(1) PD620-3 antenna	Town (existing)	20' Platform	140'	(1) 7/8" coax cable
(1) 11' Whip Antenna	Town (existing)	20' Platform	140'	(1) 1/2" coax cable
(3) PD458-2 antennas	Town (existing)	20' Platform	140'	(1) 1 1/4" coax cable (2) 7/8" coax cables (1) 1/2" coax cable (dead end)
(6) EMS RR90-17-DP antennas (6) LGP TMAs	T-Mobile (existing)	(3) T-Frames	124'	(12) 1 5/8" coax cables
(6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA's	**Cingular (proposed)**	**(3) T-Frames**	**113'**	**(3) new 1 5/8" coax cables** (9) 1 5/8" coax cables
(1) Cushcraft PC9013 antenna	(existing)	18" Bar	24'	(1) 1/2" coax cable
(2) Silent Witness V60BB6036 cameras	(existing)	10" Bar	17'	(2) 2/18 AWG cables

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 = 85 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 74 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 tower structure were evaluated to compare with allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were within the allowable stresses. Detailed analysis and calculations for the proposed load condition are provided in section 6 of this report. The anchor bolts and foundation were also found to be within allowable limits.

5. CONCLUSIONS AND RECOMMENDATIONS

The results of the analysis indicate that the tower structure, anchor bolts and tower foundation are in compliance with the proposed loading conditions. **Therefore, the tower is considered structurally adequate with the wind load classification specified above and all the existing and proposed antenna loading.**

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 is installed as specified in Section 6 of this report.

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

26 July 2006

Honorable Paul C. Beaulieu
First Selectman, Town of Cromwell
41 West Street
Cromwell, CT 06416

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at 179 Shunpike Road, Cromwell, Connecticut

Dear Mr. Beaulieu:

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) new 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 114' above ground level. Cingular will keep the nine (9) existing 1 5/8" diameter coaxial cables add three (3) of the same dimension. It proposes to remove six (6) existing tower mounted amplifiers and add six (6) new units, located at the same height as the antennas.

In summary, the final antenna configuration at 179 Shunpike 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 Cromwell 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

Willis Street, Bristol, CT

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

CINGULAR WIRELESS
Proposed Modifications

Site Address: Willis Street, Bristol, CT; *Project Location Map* attached

Coordinates: Lat: 41' 38' 56.7"; Long: 72' 56' 52.9"

Site Owner: American Tower

Type of Existing Facility: 128' tower and a 15' x 25' equipment shelter

Antenna Configuration: Center line – 126' above ground level; remove existing antennas and replace with six (6) Powerwave 7770 units; *specification attached*

TMA Configuration: Existing units to be removed and add twelve (12) new LGP 214nn units; *specification attached*

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

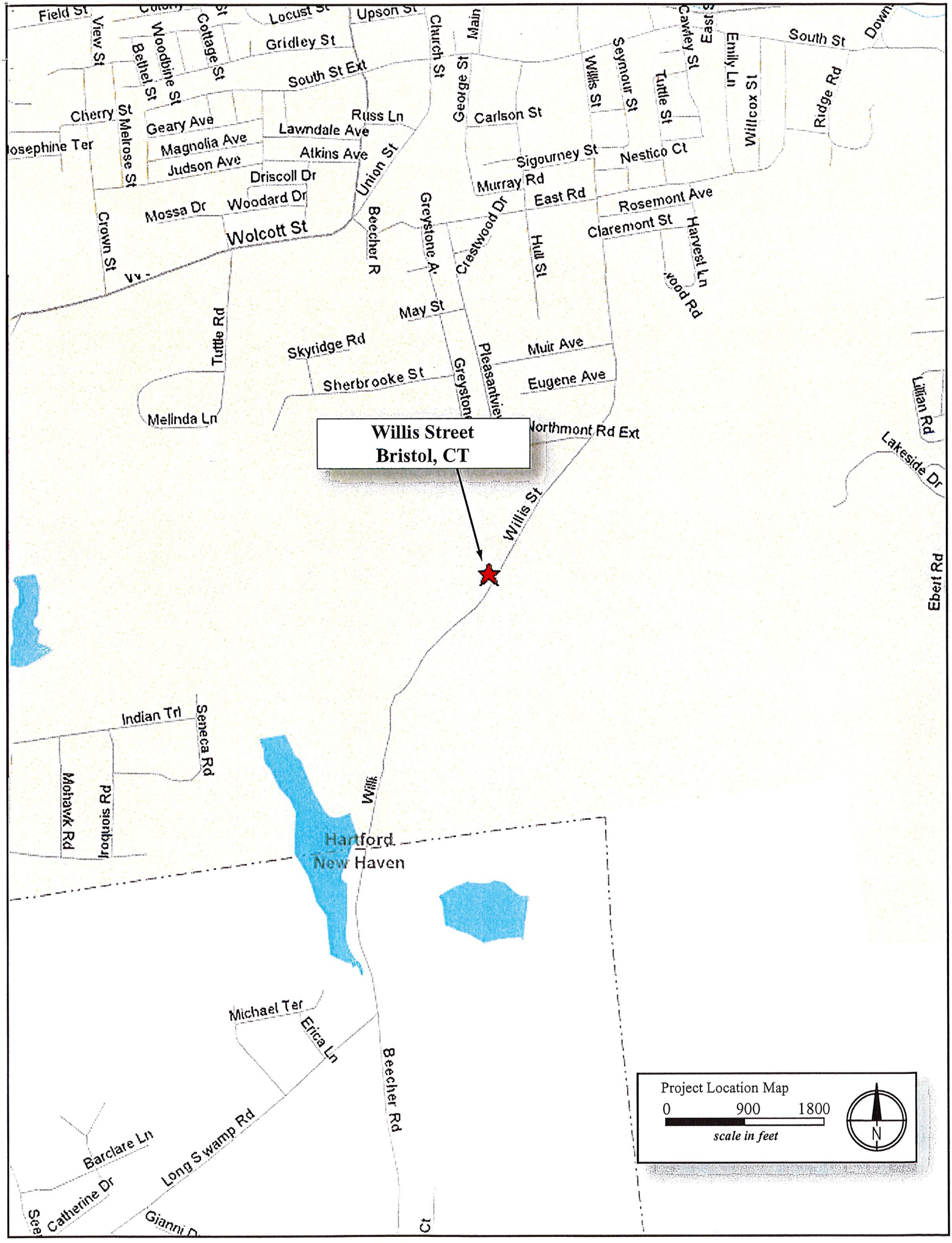
Other Work: Add one (1) new Ericsson RBS 3206 equipment cabinet inside the existing shelter

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 14.22% 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 # 1055								
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	126	1935.0	1	500.0	820.0	11.3	1000	1.13%
Nextel	110	851.0	4	100.0	656.0	11.9	567	2.10%
Cingular TDMA	126	880.0	16	100.0	2624.0	36.2	587	6.18%
Cingular 800	126	880.0	2	196.0	642.9	8.9	587	1.51%
Cingular 1900	126	880.0	2	427.0	1400.6	19.3	587	3.30%
TOTAL								**14.22%**

Structural Analysis: *Structural Analysis* attached.


Willis Street
Bristol, CT
Project Location Map
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900
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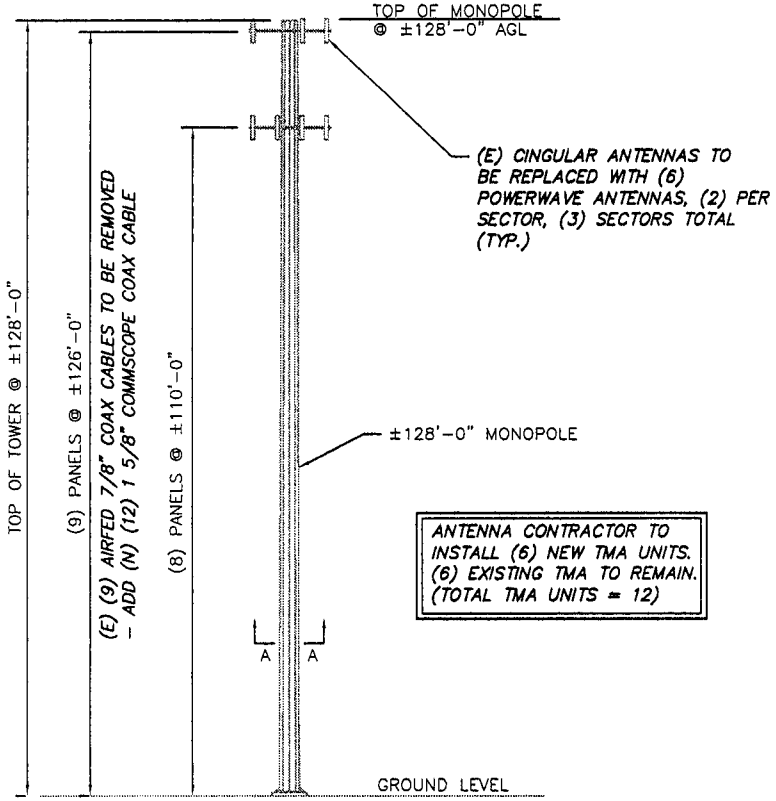
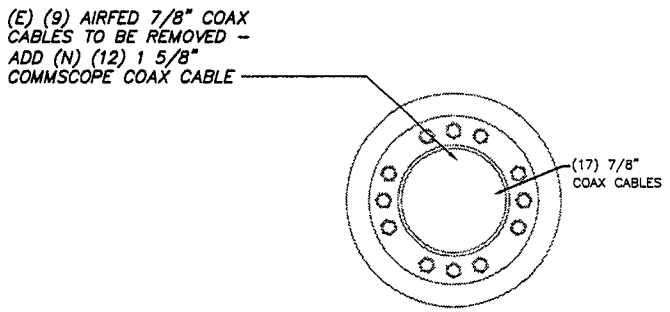
scale in feet
N
Field St
View St
Woodbine St
Bethel St
Cottage St
Locust St
Upson St
Gridley St
South St Ext
Church St
Main
Broad St
Cherry St
Melrose St
Geary Ave
Magnolia Ave
Judson Ave
Lawndale Ave
Russ Ln
Atkins Ave
Driscoll Dr
Woodard Dr
Mossa Dr
Wolcott St
Union St
Carlson St
Willis St
Seymour St
Cawley St
Tuttle St
Emily Ln
Williams St
South St
Ridge Rd
Sigourney St
Nestico Ct
Murray Rd
East Rd
Rosemont Ave
Claremont St
Harvest Ln
Crestwood Dr
Hull St
Beecher R
Greystone A
Crown St
Tuttle Rd
May St
Skyridge Rd
Sherbrooke St
Melinda Ln
Pleasantview
Muir Ave
Eugene Ave
Northmont Rd Ext
Lillian Rd
Lakeside Dr
Ebert Rd
Indian Trl
Seneca Rd
Mohawk Rd
Iroquois Rd
Willi
Hartford
New Haven
Michael Ter
Erica Ln
Beecher Rd
Barclare Ln
Long Swamp Rd
Catherine Dr



TOWER ELEVATION

SCALE: 1" = 30'-0"



SECTION VIEW

LATITUDE: 41° 38' 56.7"
LONGITUDE: 72° 56' 52.9"

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
185-008

SITE NAME: BRISTOL

SITE NUMBER: 1055

2 WILLIS STREET (CELL SITE #56)
BRISTOL, CT 06010

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D
3	05/31/06	MISC. REVISIONS	PHR	CJW	CJW
2	05/12/06	MISC. REVISIONS	PHR	CJW	CJW
1	04/03/06	MISC. REVISIONS	PHR	CJW	CJW
0	03/21/06		PHR	CJW	CJW

SITE NUMBER
1055

AMERICAN TOWER

Structural Analysis Report

Structure	:	**120 ft Valmont Monopole**
ATC Site Name	:	**Brst Bristol, CT**
ATC Site Number	:	**302500**
Proposed Carrier	:	**Cingular**
Carrier Site Name	:	**Bristol**
Carrier Site Number	:	**CT1055**
County	:	**Hartford**
Eng. Number	:	**26356021**
Date	:	**June 26, 2006**
Usage	:	**96%**

Submitted by:
Michael Davenport, E.I.
Design Engineer

7/10/06

American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27511
Phone: 919-468-0112

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 120 ft. Valmont Monopole located at 760 Beecher Rd., Bristol, CT 06010, Hartford County (ATC site #302500). The tower was originally designed and manufactured by Valmont (Drawing #DC1671Z, dated December 29, 1993). Modifications designed by Spectrasite Communications Inc. (File #CT-0036, Rev. 2, dated July 22, 2002) have been installed.

Analysis

The tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed:	80.0 mph (Fastest Mile) / 90.0 mph (3-second gust)
Radial Ice:	69.3 mph (Fastest Mile) w/ ½" ice
Code:	TIA/EIA-222-F / 2003 International Building Code

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
126.0	3	CSS DUO4-8670	Platform w/ Handrails	(3) 1 5/8"	Cingular
	6	ADC TTA DD1900			
110.0	12	48" x 12" Panels	Side Arms	(12) 1 5/8"	Nextel
32.0	1	Nokia CS72187.01	-	(1) ½"	Cingular

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
126.0	6	Powerwave 7770.00	Platform w/ Handrails	(12) 1 ¼"	Cingular
	6	Powerwave LGP 2140X			

Install proposed coax inside monopole.

Results

The maximum structure usage is: 96%

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports **may not** be installed without installation drawings providing the location, size and welding requirements of each port.

To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	794.0	1,311.4	165
Shear (kips)	10.3	15.9	154
Axial (kips)	9.6	23.5	245

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Conclusion

Based on the analysis results, the structure meets the requirements per TIA/EIA-222-F and 2003 IBC standards. The tower and foundation can support the existing and proposed antennas with the TX line distribution as described in this report.

If you have any questions or require additional information, please call 919-466-5147.

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

-- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

26 July 2006

Honorable William T. Stortz
Mayor, City of Bristol
11 North Main Street
Bristol, CT 06010

RE: Notice of Exempt Modification – Existing Cingular Telecommunications Tower Facility at Willis Street, Bristol, Connecticut

Dear Mr. Stortz:

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

American Tower 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 128' above ground level. American Tower will remove the existing nine (9) 7/8" diameter coaxial cables and add twelve (12) 1 5/8" diameter coaxial cables. It proposes to keep the existing tower mounted amplifiers and add six (6) new units, located at the same height as the antennas.

In summary, the final antenna configuration at Willis 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 Bristol 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

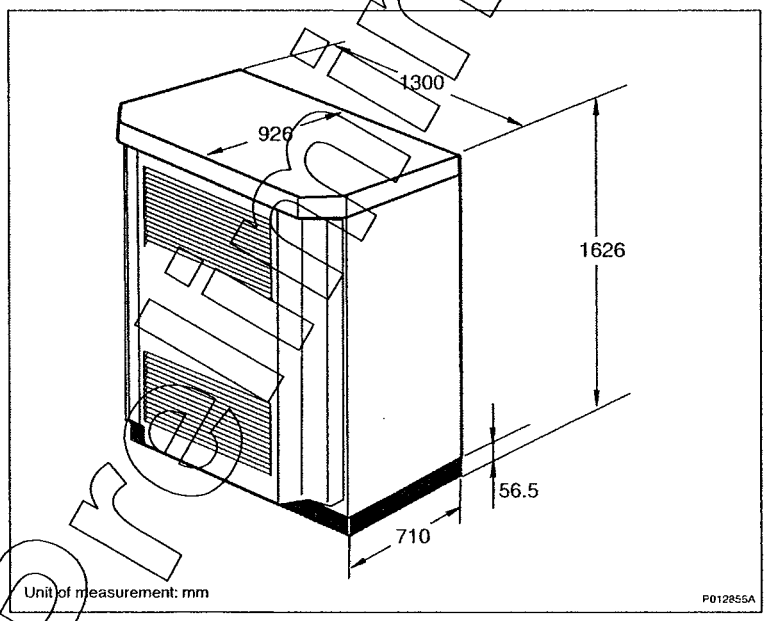


Figure 2 RBS 3106 Dimensions

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

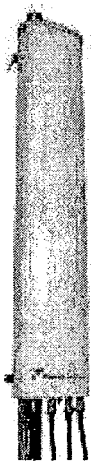
Dual Broadband Antenna

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
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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

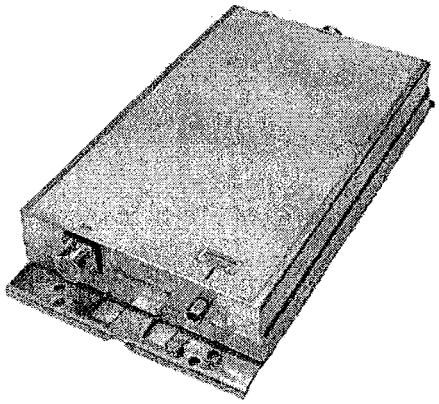
Part Number:
LGP 214nn

Up-link: 1850-1910 MHz
Down-link: 1930-1990 MHz
Bypass: 824-894 MHz

Gain: 12 dB
Noise Figure: < 1.7 dB

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

Powerwave technologies

Tower Mounted Amplifier

1900/850 MHz

Technical Specifications

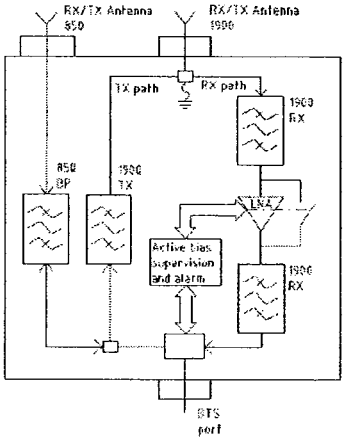
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency 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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Powerwave technologies

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

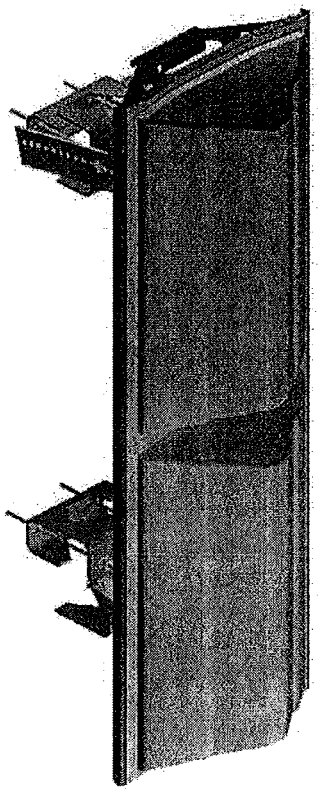
Specifications for Existing Antennas

DUO4-8670

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