

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

August 1, 2006

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

RE: **EM-CING-078-156-107-101-060717** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1298 Storrs Road, Mansfield; 1 Burwell Road, West Haven; South Orange Center Road, Orange; and 15 (aka 8) Dwight Street, North Haven, Connecticut.

Dear Ms. Lankenau:

At a public meeting held on June 27, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify the Mansfield, West Haven, and Orange telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies, with the condition that a revised structural for the Mansfield site (taking into account Verizon Wireless' proposal) is submitted to the Council prior to construction and any recommendations by the structural engineer are implemented prior to the antenna installation. The Council tabled the North Haven proposal until the structural analysis report for that site is received.

The proposed modifications are to be implemented as specified here and in your notice dated July 13, 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
Chairman

CCT/laf

c: See List Attachment.

List Attachment.

- c: The Honorable Kevin J. Kopetz, First Selectman, Town of North Haven
- Arthur Hausman, Zoning Enforcement Officer, Town of North Haven
- The Honorable James M. Zeoli, First Selectman, Town of Orange
- Paul Dinice, Zoning Enforcement Officer, Town of Orange
- The Honorable John M. Picard, Mayor, City of West Haven
- Edwin Selden, City Planner, City of West Haven
- The Honorable Elizabeth Patterson, Mayor, Town of Mansfield
- Martin H. Berliner, Town Manager, Town of Mansfield
- Gregory Padick, Town Planner, Town of Mansfield
- Karen L. Couture, Site Acquisition Specialist
- Thomas F. Flynn III, Esq., Sprint-Nextel Communications
- Kenneth C. Baldwin, Esq., Robinson & Cole LLP
- Christine Farrell, T-Mobile
- Christopher B. Fisher, Esq., Cuddy & Feder LLP
- Michele G. Briggs, New Cingular Wireless PCS, LLC
- Thomas J. Regan, Esq., Brown Rudnick Berlack Israels, LLP
- George L. Davis, Tower Manager



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July 19, 2006

The Honorable James M. Zeoli
First Selectman
Town of Orange
Town Hall
617 Orange Center Road
Orange, CT 06477-2423

RE: **EM-CING-078-156-107-101-060717** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1298 Storrs Road, Mansfield; 1 Burwell Road, West Haven; South Orange Center Road, Orange; and 15 (aka 8) Dwight Street, North Haven, Connecticut.

Dear Mr. Zeoli:

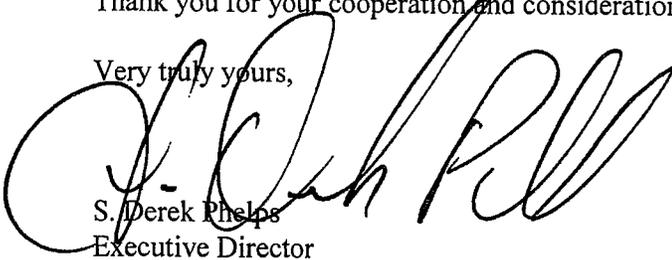
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

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 26, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

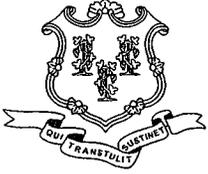


S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Paul Dinice, Zoning Enforcement Officer, Town of Orange



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July 19, 2006

The Honorable John M. Picard
Mayor
City of West Haven
City Hall
355 Main Street
West Haven, CT 06516

RE: **EM-CING-078-156-107-101-060717** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1298 Storrs Road, Mansfield; 1 Burwell Road, West Haven; South Orange Center Road, Orange; and 15 (aka 8) Dwight Street, North Haven, Connecticut.

Dear Mayor Picard:

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 26, 2006.

Thank you for your cooperation and consideration.

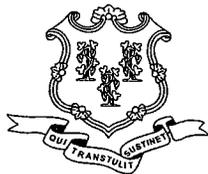
Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Edwin Selden, City Planner, City of West Haven



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July 19, 2006

The Honorable Kevin J. Kopetz
First Selectman
Town of North Haven
Town Hall
18 Church Street
North Haven, CT 06473

RE: **EM-CING-078-156-107-101-060717** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1298 Storrs Road, Mansfield; 1 Burwell Road, West Haven; South Orange Center Road, Orange; and 15 (aka 8) Dwight Street, North Haven, Connecticut.

Dear Mr. Kopetz:

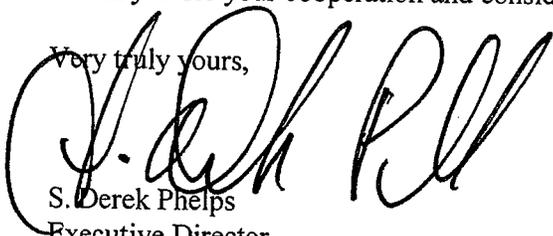
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

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 26, 2006.

Thank you for your cooperation and consideration.

Very truly yours,



S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Arthur Hausman, Zoning Enforcement Officer, Town of North Haven



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July 19, 2006

The Honorable Elizabeth Patterson
Mayor
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268

RE: **EM-CING-078-156-107-101-060717** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1298 Storrs Road, Mansfield; 1 Burwell Road, West Haven; South Orange Center Road, Orange; and 15 (aka 8) Dwight Street, North Haven, Connecticut.

Dear Mayor Patterson:

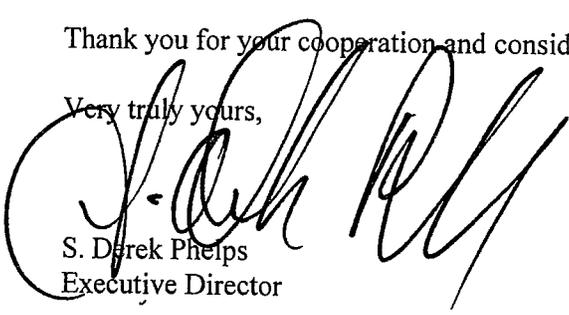
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

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 26, 2006.

Thank you for your cooperation and consideration.

Very truly yours,


S. Derek Phelps
Executive Director

SDP/ap

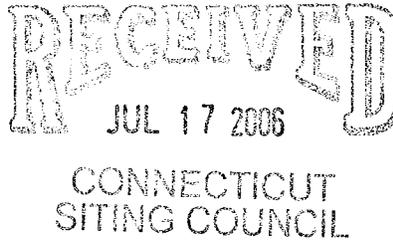
Enclosure: Notice of Intent

c: Gregory Padick, Town Planner, Town of Mansfield
Martin H. Berliner, Town Manager, Town of Mansfield

EM-CING-078-156-107-101-060717

13 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 –Four (4) Existing Telecommunications Tower Facilities

- Site 1: 1298 Storrs Road, Mansfield, Tolland County**
- Site 2: 1 Burwell Road, West Haven, New Haven County**
- Site 3: S. Orange Center Road, Orange, New Haven County**
- Site 4: 15 (aka 8) Dwight Street, North Haven, New Haven County**

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:

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 Elizabeth C. Patterson, Mayor, Town of Mansfield
Honorable John M. Picard, Mayor, City of West Haven
Honorable James Zeoli, First Selectman, Town of Orange
Honorable Kevin J. Kopetz, First Selectman, Town of North Haven

1298 Storrs Road, Mansfield, CT

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

**CINGULAR WIRELESS
Proposed Modifications**

Site Address: 1298 Storrs Road, Mansfield, CT; *Project Location Map attached*

Coordinates: Lat: 41.81392; Long: 72.25952

Site Owner: University of Connecticut

Type of Existing Facility: 290' tower and an equipment shelter within an irregularly shaped compound

Antenna Configuration: Center line – 185' 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*

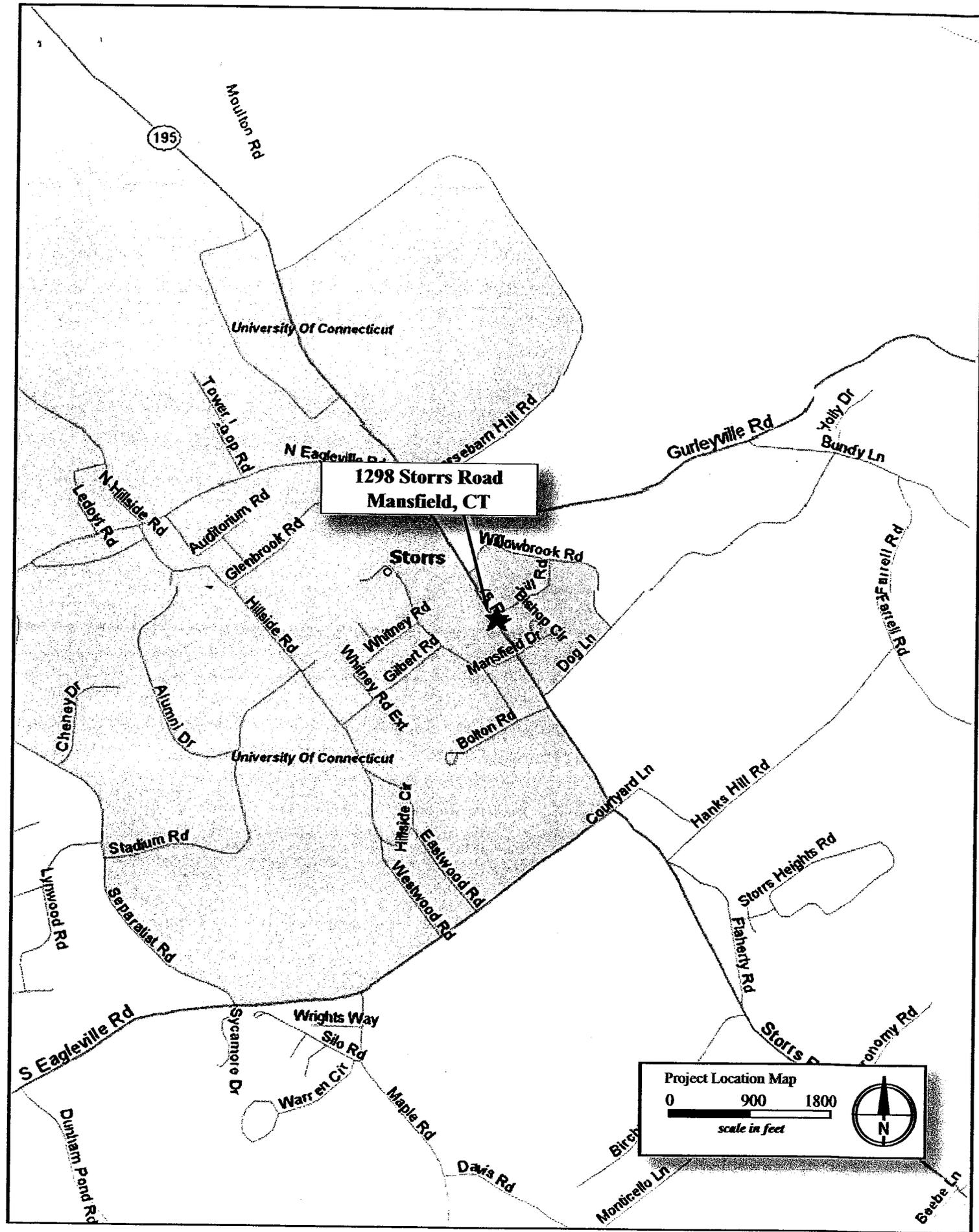
Coaxial Cables: Existing 1 5/8" diameter coaxial cables to remain and add one (1) of the same diameter

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 42.12% 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 # 1077								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	185	1935.0	1	500.0	820.0	5.3	1000	0.53%
Nextel	240	851.0	9	100.0	1476.0	5.6	567	0.99%
Uconn Police	180	866.0	3	197.0	969.2	6.6	577	1.14%
Unspecified antennas - data from previous CSC filing								14.12%
Cingular TDMA	185	880.0	16	100.0	2624.0	16.8	587	2.87%
Cingular 800	185	880.0	2	298.0	977.4	6.3	587	1.07%
Cingular 1900	185	1900.0	2	427.0	1400.6	9.0	1000	0.90%
Verizon 800	80	869.0	9	200.0	2952.0	101.2	579	17.46%
Verizon 1900	84	1900.0	3	200.0	984.0	30.6	1000	3.06%
TOTAL								42.12%

Structural Analysis: *Structural Analysis attached.*



**1298 Storrs Road
Mansfield, CT**

Project Location Map

0 900 1800
scale in feet



NATCOMM, LLC

Consulting Engineers

June 27, 2006

Mr. Thomas Sun, AIA
CH2M Hill Communications Group
8619 W. Bryn Mawr, Suite 615
Chicago, IL 60631

*Re: Level 1 Structural Evaluation
Cingular Site #1077
North Eagleville Rd.,
Storrs, CT 06268*

Natcomm Project No. 06500.1077

Dear Mr. Sun,

We have reviewed the proposed Cingular UMTS antenna upgrade at the above referenced site. The purpose of the review is to determine the adequacy of an existing 290 ft. guyed tower to support the proposed antennas. The review considered the effects of wind load, dead load, ice load and seismic forces in accordance with TIA/EIA-222-F and Connecticut State Building Code. Site assessment information obtained by Natcomm personnel on June 21, 2006 was used as reference material.

The existing antenna configuration is as follows:

- Uconn: One (1) FM antenna mast mounted at top of guyed tower at an elevation of 275' AGL.
- Uconn: Two (2) whip antennas mounted to standard side arm standoffs at elevation of 265' AGL.
- Uconn: Two (2) panel antennas mounted to standard side arm standoffs and one (1) whip antenna mounted to a standard sidearm standoff at an elevation of 255' AGL.
- Nextel: Twelve (12) DB844H90 antennas mounted on standard boom gate mounts at an elevation of 225' AGL.
- Cingular: Nine (9) panel antennas mounted on standard boom gate mounts and one (1) panel antenna mounted to an extension arm off boom gate at an elevation of 185' AGL.
- Uconn: One (1) whip antenna mounted to a standard side arm standoff at elevation of 170' AGL.
- Uconn: Two (2) 6' diameter dish antennas mounted to a standard side arm standoff at an elevation of 118' AGL.
- Uconn: One (1) whip antenna mounted to a standard side arm standoff at elevation of 112' AGL.
- Uconn: One (1) 6' diameter dish antenna mounted to a standard side arm standoff at an elevation of 105' AGL.
- Verizon: Three (3) standard panel antennas and three (3) Metawave panel antennas mounted on a standard platform at an elevation of 80' AGL.

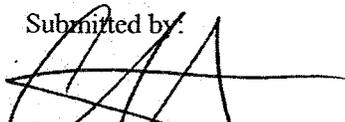
The proposed modified antenna loading is as follows:

- Cingular: Six (6) Powerwave 7770.00 panel antennas w/ twelve (12) Powerwave LGP21401 TMA's on standard boom gate mounts in lieu of the existing ten (10) panel antennas at an elevation of 185' AGL.

Based on the information provided, and considering the reduced antenna loading, the existing structure meets all the requirements of the TIA/EIA-222-F Standard considering the basic wind speed (fastest mile) of 85 mph for Tolland County.

In conclusion, the existing 290 ft monopole is adequate to support the proposed Cingular UMTS antenna upgrade and related equipment. If there are any questions regarding this matter, please feel free to call.

Submitted by:


Carlo F. Centore, PE
Project Manager



10 July 2006

Honorable Elizabeth C. Patterson
Mayor, Town of Mansfield
Audrey P. Beck Municipal Building
4 South Eagleville Road
Mansfield, CT 06268

**RE: Notice of Exempt Modification – Existing Cingular
Telecommunications Tower Facility at 1298 Storrs Road,
Mansfield, Connecticut**

Dear Ms. Patterson:

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 185’ above ground level. Cingular will keep the existing eleven (11) 1 5/8” diameter coaxial cables and add one (1) 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 1298 Storrs 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.

James Nelson Kise, AIA / AICP / PP

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

John R. Gibbons, AIA / AICP

Philip E. Scott, RA

Suzanna Barucco

LaVern Browne

Katherine E. Cowing, LEED

Jody Holton, AICP

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.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 Town of Mansfield 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. Lanckenau, AICP
Planner

1 Burwell Road, West Haven, CT

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

**CINGULAR WIRELESS
Proposed Modifications**

Site Address: 1 Burwell Road, West Haven, CT; *Project Location Map* attached

Site Owner: Ground: Rodney Burwell and Joanne Hollis

Type of Existing Facility: 160' lattice tower and a 25' x 25' equipment shelter in a 83'8" x 61' compound that is surrounded by a chain link fence

Antenna Configuration: Center line – 152' above ground level; remove existing CSS DUO4- 8670 antennas and replace with six (6) Powerwave 7770 units; *specification attached*

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

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

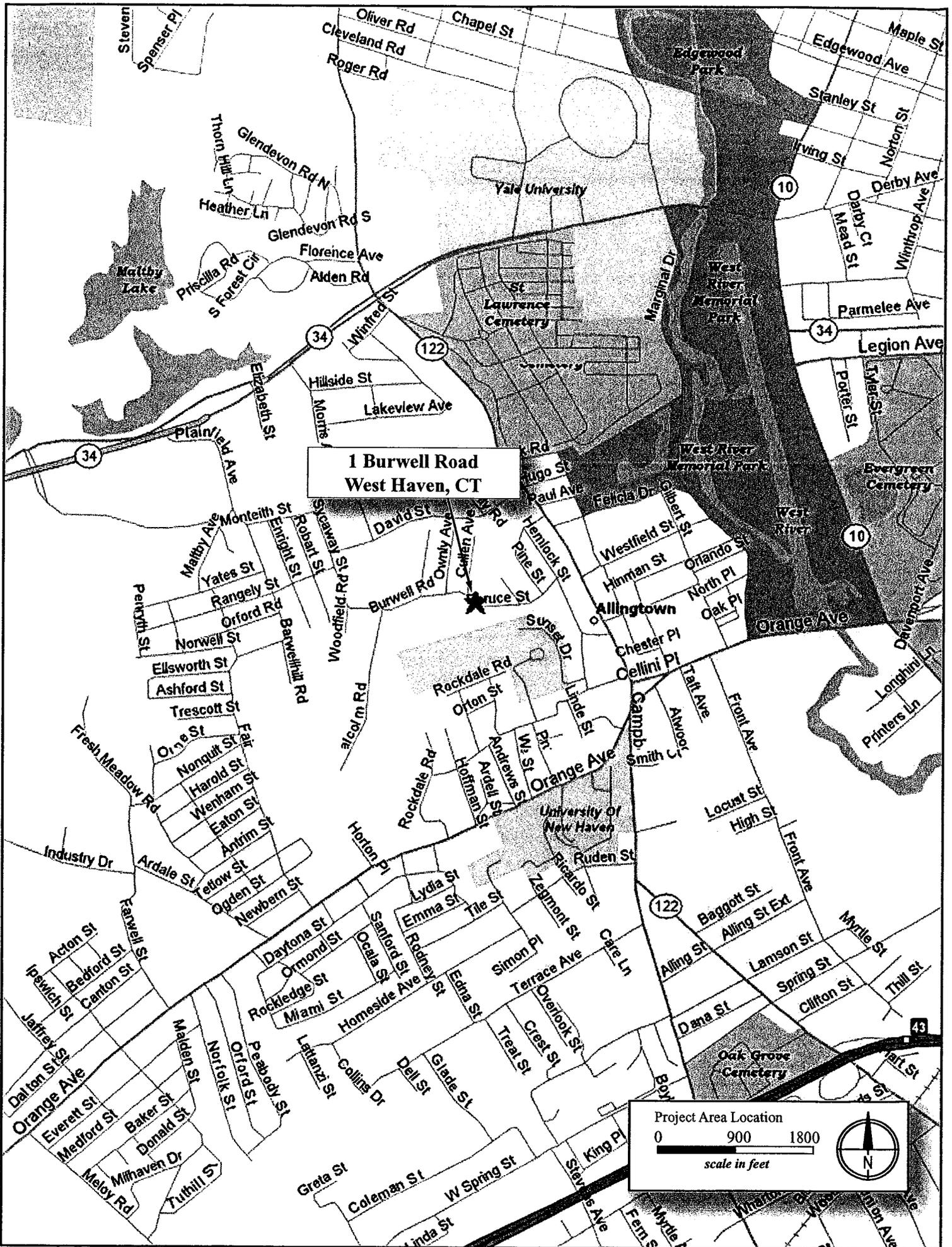
Other Work: Add one (1) Ericsson RBS 3206 equipment cabinet inside the existing shelter

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 29.98% 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 # 2064								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	152	1935.0	1	500.0	820.0	7.8	1000	0.78%
Cingular 800	152	869.0	20	100.0	3280.0	31.1	579	5.37%
Cingular Omni	152	150.0	1	500.0	820.0	7.8	200	3.89%
Nextel	140	851.0	8	100.0	1312.0	14.7	567	2.59%
AT&T	130	1900.0	8	100.0	1312.0	17.0	1000	1.70%
W.H. Police	88	460.0	3	147.0	723.2	20.5	307	6.68%
S. CT Gas	88	450.0	1	200.0	328.0	9.3	300	3.10%
S. CT Gas	70	150.0	2	80.0	262.4	11.7	200	5.87%
TOTAL								29.98%

Structural Analysis: *Structural Analysis* attached.



1 Burwell Road
West Haven, CT

Project Area Location

0 900 1800

scale in feet



1 TOWER
ELEV.: 160'-0"

2 (N) CINGULAR ANTENNAS
ELEV.: 157'-0"

3 OF NEXTEL ANTENNAS
ELEV.: 140'-0" AGL.

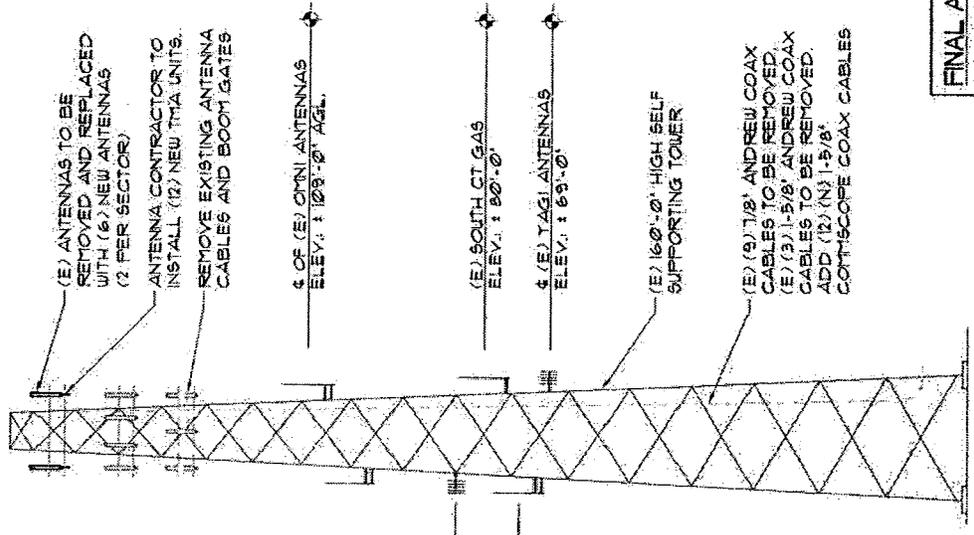
4 OF AT&T ANTENNAS
ELEV.: 130'-0" AGL.

5 OF (E) OMNI ANTENNAS
ELEV.: 102'-0" AGL.

6 OF (E) TAGI ANTENNAS
ELEV.: 84'-6" AGL.

7 (E) OMNI ANTENNAS
ELEV.: 74'-0"

8 GRADE
ELEV.: 0'-0"



(E) ANTENNAS TO BE REMOVED AND REPLACED WITH (6) NEW ANTENNAS (2 PER SECTOR)

ANTENNA CONTRACTOR TO INSTALL (12) NEW TMA UNITS. REMOVE EXISTING ANTENNA CABLES AND BOOT GATES

9 OF (E) OMNI ANTENNAS
ELEV.: 109'-0" AGL.

(E) SOUTH CT GAS
ELEV.: 80'-0"

10 (E) TAGI ANTENNAS
ELEV.: 69'-0"

(E) 160'-0" HIGH SELF SUPPORTING TOWER

(E) (9) 7/8" ANDREW COAX CABLES TO BE REMOVED. (E) (3) 1-5/8" ANDREW COAX CABLES TO BE REMOVED. ADD (12) (N) 1-5/8" CONTSCOPE COAX CABLES

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

1 TOWER ELEVATION
1" = 30'-0"



CH2MHILL
8619 WEST BRYN MAWR
CHICAGO, ILLINOIS 60681

3	07-11-08	ISSUED FOR CSC SUBMITTAL	PH	JZ	JZ	CINGULAR WIRELESS	
2	05-31-08	ISSUED FOR CSC REVIEW	PH	JZ	JZ	SITE # 2064	
1	03-19-08	SCOPING REVIEW	PH	JZ	JZ	SITE NAME WEST HAVEN	
NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP'D	1 BURNELL ROAD, WEST HAVEN, CT 06516	
SCALE: 1" = 30'-0"						CHECKED BY: JZ	DRAWING NUMBER: 2064
						DRWN BY: PH	REV: 0

**DETAILED STRUCTURAL ANALYSIS AND
EVALUATION OF EXISTING 155' SELF
SUPPORTING LATTICE TOWER FOR NEW
ANTENNA ARRANGEMENT**

**Cingular Site #2064
1 Burwell Road
West Haven, Connecticut**

prepared for

CH2MHILL

8619 West Bryn Mawr, Suite 615
Chicago, IL 60631



Cingular Wireless
580 Main Street
Bolton, MA 01740

prepared by



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

36922926.00008
CH2-016

July 10, 2006

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1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 155' self supporting lattice tower located at 1 Burwell Road in West Haven, 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 90 mph (fastest mile) and 78 mph (fastest mile) concurrent with 1/2" 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) existing antennas (9) existing 1 5/8" coax cables and (3) existing T-Arms.	Cingular Blue (Existing)	@ 127'
Remove: (9) existing antennas (12) existing 1 1/4" coax cables and (3) Boom Gates.		
Install: (3) Powerwave 7770.00 antennas and (6) Powerwave LGP21401 TMA's on (3) Flush Mounts with (6) new 1 5/8" coax cables.	Cingular (Proposed)	@ 155'

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.**

The installation of (6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA's on the existing (3) Boom Gates with (12) new 1 5/8" coax cables was also investigated. The tower and anchor bolts were found to be adequate. The foundation was found to comply with Section 3108.4.2 of the 2005 Connecticut State Building Code.

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 a tower report prepared by Stainless, Inc, job number 2940-3, dated August 14, 1981.
- 3) Foundation information taken from a Foundation Mapping Report prepared by Stegman Engineering dated July 3, 2006.
- 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.

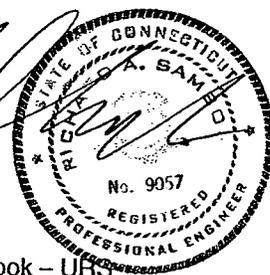
Sincerely,

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 1 Burwell Road in West Haven, Connecticut. The structure is a 155' self supporting lattice tower designed and manufactured Stainless, Inc.

The inventory is summarized in the table below:

<i>Antenna Type</i>	<i>Carrier</i>	<i>Mount</i>	<i>Antenna Centerline Elevation</i>	<i>Cable</i>
(1) 10' omni antenna	(existing)	Flush Mount	155'	---
(3) Powerwave 7770.00 antennas and (6) Powerwave LGP21401 TMA's	Cingular (proposed)	(3) Flush Mounts	155'	(6) new 1 5/8" coax cables
(12) DB844H90 antennas	Nextel (existing)	(3) T-Arms	138'	(12) 1 5/8" coax cables
(1) 9' Omni antenna	(existing)	Standoff Mount	109'	(1) 1 1/4" coax cable
(1) 8' Omni antenna	(existing)	Standoff Mount	102'	(1) 7/8" coax cable
(1) Yagi antenna	(existing)	Direct Mount	84.5'	(1) 1/2" coax cable
(1) 4-Bay Dipole antenna	(existing)	Standoff Mount	79'	(1) 1/2" coax cable
(1) 8' Omni antenna	(existing)	Standoff Mount	74'	(1) 7/8" coax cable
(2) Yagi antennas	(existing)	Standoff Mount	69'	(1) 1/2" coax cable

*Omni/Whip antenna elevations are at the base of the antenna.

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 = 90 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 78 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 were also found to be within allowable limits. The foundation was found to comply with Section 3108.4.2 of the 2005 Connecticut State Building Code.

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.**

The installation of (6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA's on the existing (3) Boom Gates with (12) new 1 5/8" coax cables was also investigated. The tower and anchor bolts were found to be adequate. The tower foundation was found to comply with Section 3108.4.2 of the 2005 Connecticut State Building Code.

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.

10 July 2006

Honorable John M. Picard
Mayor, City of West Haven
355 Main Street
West Haven, CT 06516

**RE: Notice of Exempt Modification – Existing Cingular
Telecommunications Tower Facility at 1 Burwell Road,
West Haven, Connecticut**

Dear Mr. Picard:

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 152’ above ground level. Cingular will remove the existing coaxial cables and replace them with twelve (12) new 1 5/8” diameter coaxial cables. 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 1 Burwell 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.

James Nelson Kise, AIA/AICP/PP

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

John R. Gibbons, AIA/AICP

Philip E. Scott, RA

Suzanna Barucco

LaVern Browne

Katherine E. Cowing, LEED

Johette 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

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 West Haven 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

South Orange Center Road, Orange, CT

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

**CINGULAR WIRELESS
Proposed Modifications**

Site Address: South Orange Center Road, Orange, CT; *Project Location Map* attached

Coordinates: Lat: 41' 15' 10.95; Long: 73' 00' 39.2"

Site Owner: Town of Orange

Type of Existing Facility: 180' high monopole and an equipment shelter in a 79'6" x 54'10" compound

Antenna Configuration: Center line – 177' above ground level; remove existing antennas and replace with six (6) Powerwave 7770 units; *specification attached*

TMA Configuration: Existing units to be removed and replaced with six (6) new LGP 214nn units; *specification attached*

Coaxial Cables: Existing 1 5/8" diameter coaxial cables to remain

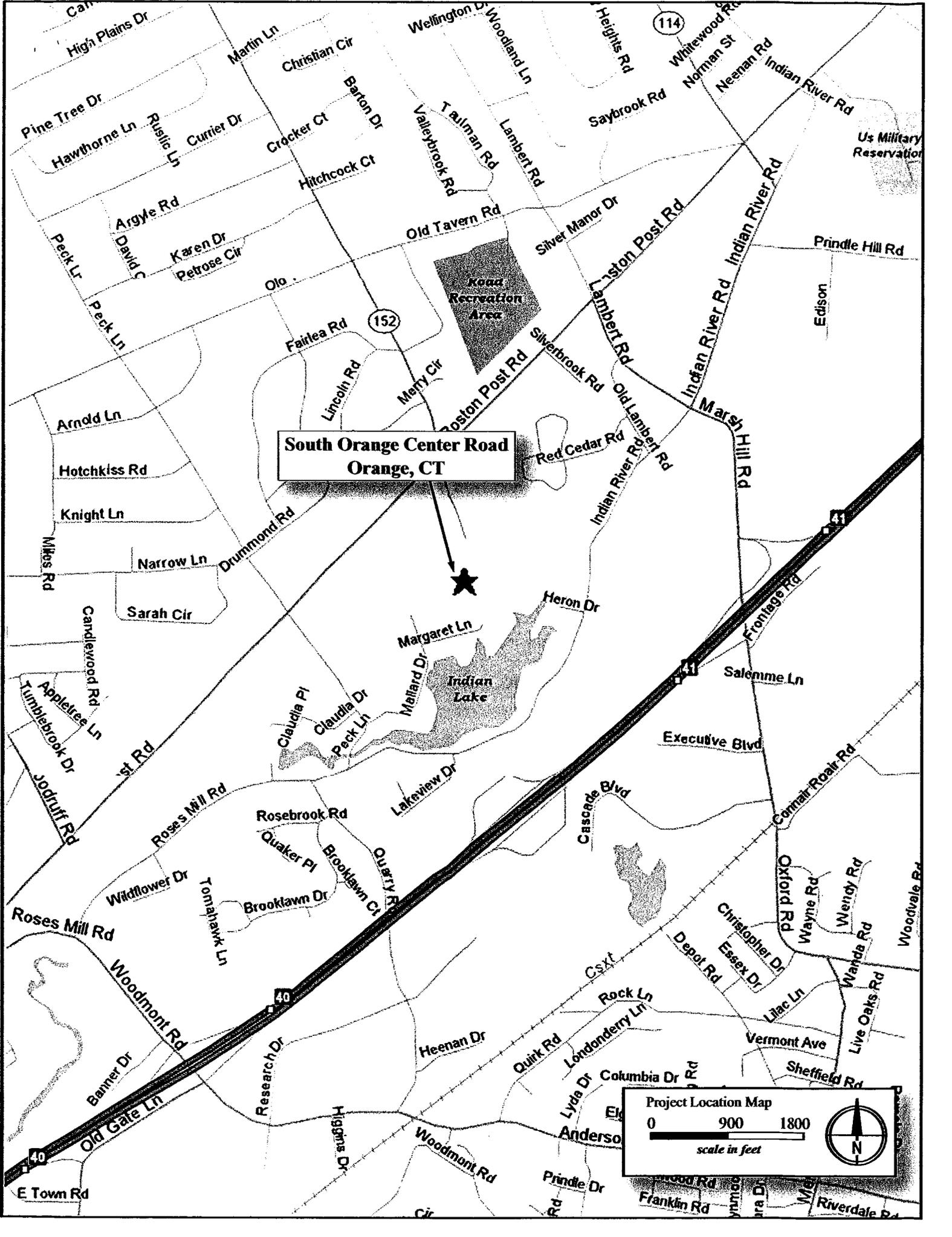
Other Work: Add one (1) Ericsson RBS 3106 equipment cabinet inside an existing shelter

Power Density:

As the table demonstrates, the cumulative worst-case exposure would be approximately 33.79% 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 # 5101								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	177	1935.0	1	500.0	820.0	5.7	1000	0.57%
Cingular 800	177	880.0	6	296.0	2912.6	20.4	587	3.48%
Cingular 1900	177	1900.0	3	427.0	2100.8	14.7	1000	1.47%
T-Mobile	148	1900.0	8	134.6	1765.7	17.7	1000	1.77%
Nextel	137	851.0	12	100.0	1968.0	23.0	567	4.05%
Sprint	127	1900.0	11	568.4	10253.9	139.4	1000	13.94%
Verizon 800	117	880.0	19	100.0	3116.0	49.9	587	8.51%
TOTAL								33.79%

Structural Analysis: *Structural Analysis* attached.



**South Orange Center Road
Orange, CT**

**Kona
Recreation
Area**

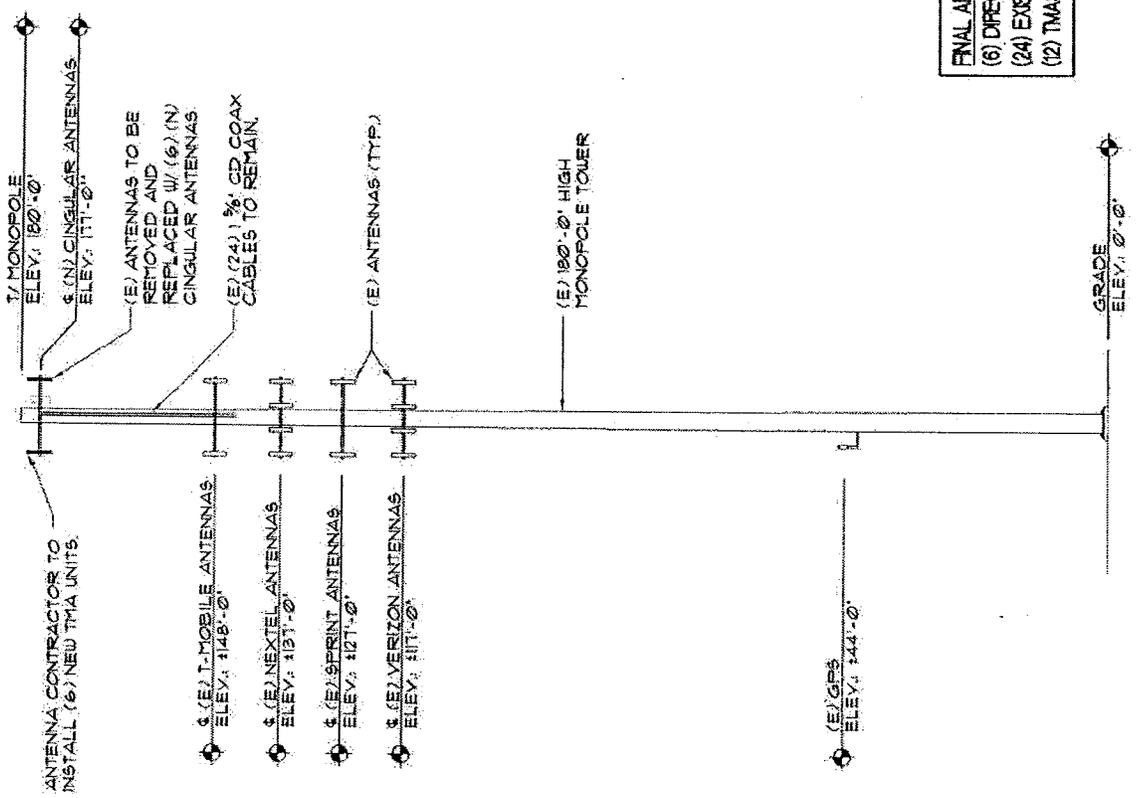
**Indian
Lake**

Project Location Map

0 900 1800

scale in feet





ANTENNA CONTRACTOR TO INSTALL (6) NEW TMA UNITS.

1/ MONOPOLE
ELEV: 190'-0"

6/ (N) DIRECTIONAL ANTENNAS
ELEV: 171'-0"

(E) ANTENNAS TO BE REMOVED AND REPLACED W/ (6) (N) DIRECTIONAL ANTENNAS

(E) (24) 1/2" CD COAX CABLES TO REMAIN

4/ (E) T-MOBILE ANTENNAS
ELEV: 148'-0"

4/ (E) NEXTEL ANTENNAS
ELEV: 137'-0"

4/ (E) SPRINT ANTENNAS
ELEV: 127'-0"

4/ (E) VERIZON ANTENNAS
ELEV: 117'-0"

(E) ANTENNAS (TYP.)

(E) 190'-0" HIGH MONOPOLE TOWER

1/ (E) GPS
ELEV: 144'-0"

GRADE
ELEV: 0'-0"

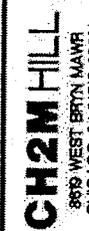
FINAL ANTENNA CONFIGURATION
 (6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
 (24) EXISTING 1-5/8" DIA COAX CABLES
 (12) TMAS

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



CH2M HILL
869 WEST BRYAN MAWR
CHICAGO, ILLINOIS 60661





CINGULAR WIRELESS

NO.	DATE	REVISION DESCRIPTION	BY	CHK/APP'D
2	04-21-08	ISSUED FOR CSC REVIEW		
1	03-21-08	SCOPING REVIEW / TOWER ELEVATION	GB JZ	JZ

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

SITE # 5101
 SITE NAME: ORANGE TRANSFER STATION
 677 S. ORANGE CENTER RD. ORANGE, CT 06477
 DRAWING NUMBER REV

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF EXISTING 180' MONOPOLE FOR NEW ANTENNA ARRANGEMENT

Cingular Site #5101
Orange Transfer Station
South Orange Center Road
Orange, Connecticut

prepared for

CH2MHILL

8619 West Bryn Mawr, Suite 615
Chicago, IL 60631



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

36922934.00008
CH2-024

June 30, 2006

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- 2. INTRODUCTION**
- 3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS**
- 4. FINDINGS AND EVALUATION**
- 5. CONCLUSIONS**
- 6. DRAWINGS AND DATA**
 - RISA TOWER INPUT / OUTPUT SUMMARY**
 - RISA TOWER DETAILED OUTPUT**
 - ANCHOR BOLT AND BASE PLATE ANALYSIS**

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 180' steel monopole structure located at the Orange Transfer Station on South Orange Center Road in Orange, 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 90 mph and 78 mph concurrent with 1/2" 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:		
(6) EMS RR90-17-02DP antennas		
(3) Decibel 779QNB120EXM antennas		
(12) 1 5/8" coax cables		
(3) 1/2" coax cables		
Install:		
(6) Powerwave 7770.00 antennas	Cingular (Proposed)	@ 178'
(12) Powerwave LGP21401 TMA's on the existing low-profile platform with		
(12) existing 1 5/8" coax cables within the		
monopole.		

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 a structural analysis (PJF Job No. 31205-0019-Rev1) prepared by Paul J. Ford and Company, signed and sealed July 12, 2005.
- 3) Antenna and mount configuration as specified on the following page of this report.

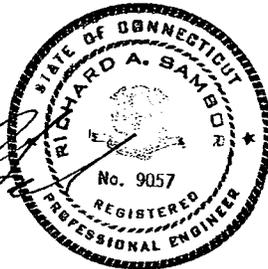
This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the assumption of the antenna and mount configuration as well as the physical condition of the tower. Notify the engineer in 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 the Orange Transfer Station on South Orange Center Road in Orange, Connecticut. The structure is a 180' steel monopole designed and manufactured by Rohn Industries, Inc.

The tower geometry and structure member sizes were taken from a structural analysis (PJF Job No. 31205-0019-Rev1) prepared by Paul J. Ford and Company, signed and sealed July 12, 2005.

The inventory is summarized in the table below:

<i>Antenna Type</i>	<i>Carrier</i>	<i>Mount</i>	<i>Antenna Centerline Elevation</i>	<i>Cable</i>
(6) Powerwave 7770.00 antennas and (12) Powerwave LGP21401 TMA's	Cingular (proposed)	Low-Profile Platform	178'	(12) existing 1 5/8" coax cables (within monopole)
(9) RFS APX16PV-16PVL-X antennas and (6) TMA's	T-Mobile (existing)	Low-Profile Platform	148'	(24) 1 5/8" coax cables (within monopole)
(12) Decibel 844G45VTZASX antennas	Nextel (existing)	Low-Profile Platform	137'	(12) 1 5/8" coax cables (within monopole)
(12) Decibel DB980H65T2E-M antennas	Sprint (existing)	Low-Profile Platform	128'	(12) 1 5/8" coax cables (within monopole)
(6) Antel WPA-80090/4CF antennas and (6) Decibel DB950G40E-M antennas	Verizon (existing)	Low-Profile Platform	117'	(12) 1 5/8" coax cables (within monopole)
(1) GPS	Sprint (existing)	Standoff Mount	50'	(1) 1/2" coax cable (within monopole)

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 ERI Tower 3.0. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 90 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 78 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

Combined axial and bending stresses on the monopole 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. The anchor bolts and base plate were found to be within allowable limits. No further analysis was conducted on the foundation since the shear and the moment at the top of the foundation 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 TIA/EIA-222-F 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 is installed within the monopole 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.

10 July 2006

Honorable James Zeoli
First Selectman, Town of Orange
617 Orange Center Road
Orange, CT 06477

**RE: Notice of Exempt Modification – Existing Cingular
Telecommunications Tower Facility at South Orange Center Road,
Orange, Connecticut**

Dear Mr. Zeoli:

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 177’ above ground level. Cingular will keep existing 1 5/8” diameter coaxial cables and remove the existing tower mounted amplifiers and replace them with six (6) new units, located at the same height as the antennas.

In summary, the final antenna configuration at South Orange Center 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.

James Nelson Kise, AIA/AICP/PP

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

John R. Gibbons, AIA/AICP

Philip E. Scott, RA

Suzanna Barucco

LaVern Browne

Katherine E. Cowing, LEED

Johette 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

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 Orange 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. Lanckenau, AICP
Planner

15 (aka 8) Dwight Street, North Haven, CT

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

CINGULAR WIRELESS Proposed Modifications

Site Address: 15 Dwight Street (aka 8 Dwight Street), North Haven, CT;
Project Location Map attached

Site Owner: Cingular

Type of Existing Facility: 150' high monopole and Cingular equipment room are located within a 54' x 50' compound that is surrounded by a chain link fence

Antenna Configuration: Center line – 153' above ground level; remove existing 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*

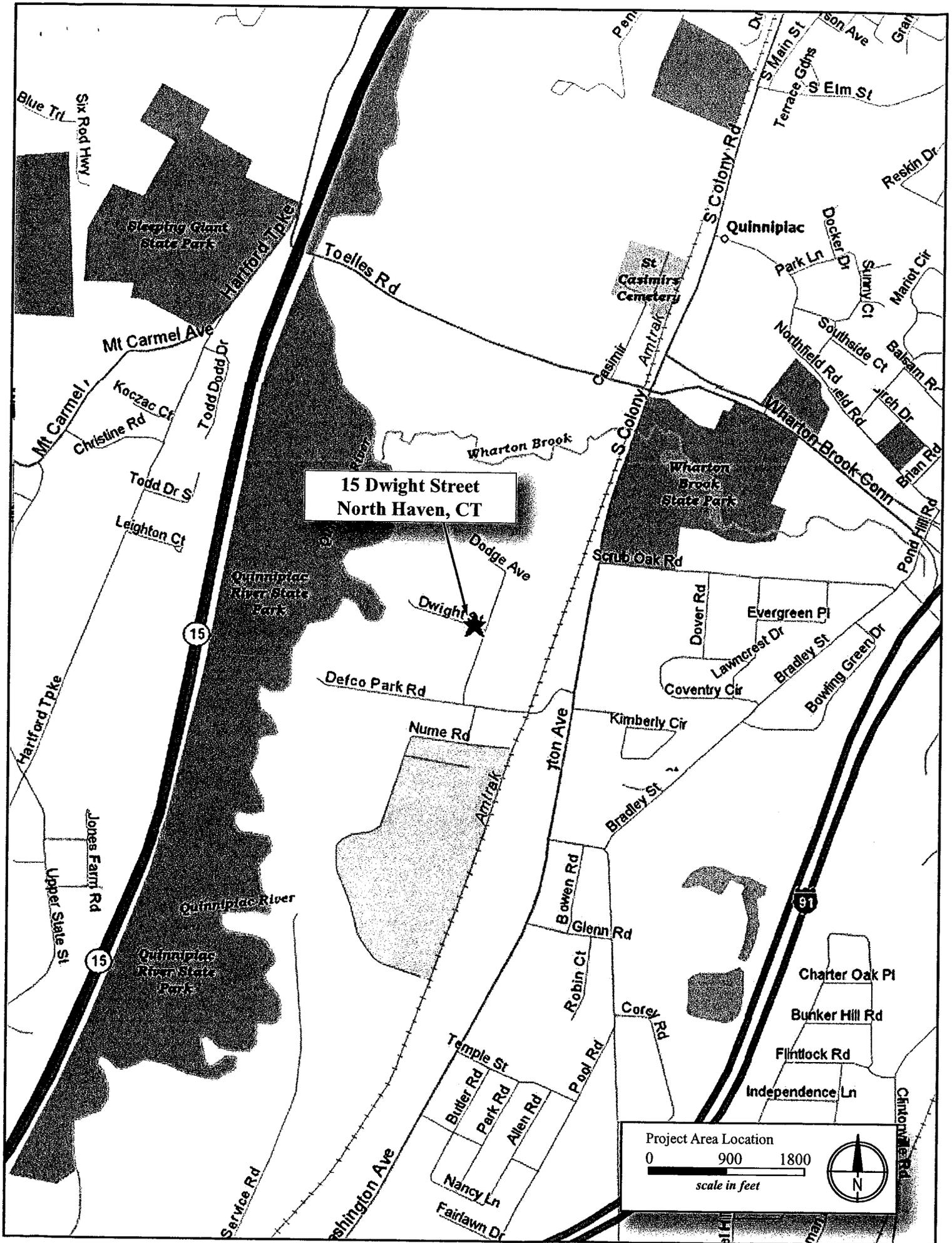
Coaxial Cables: Existing cables to be removed and replaced with twelve (12) 1 5/8" cables

Power Density:

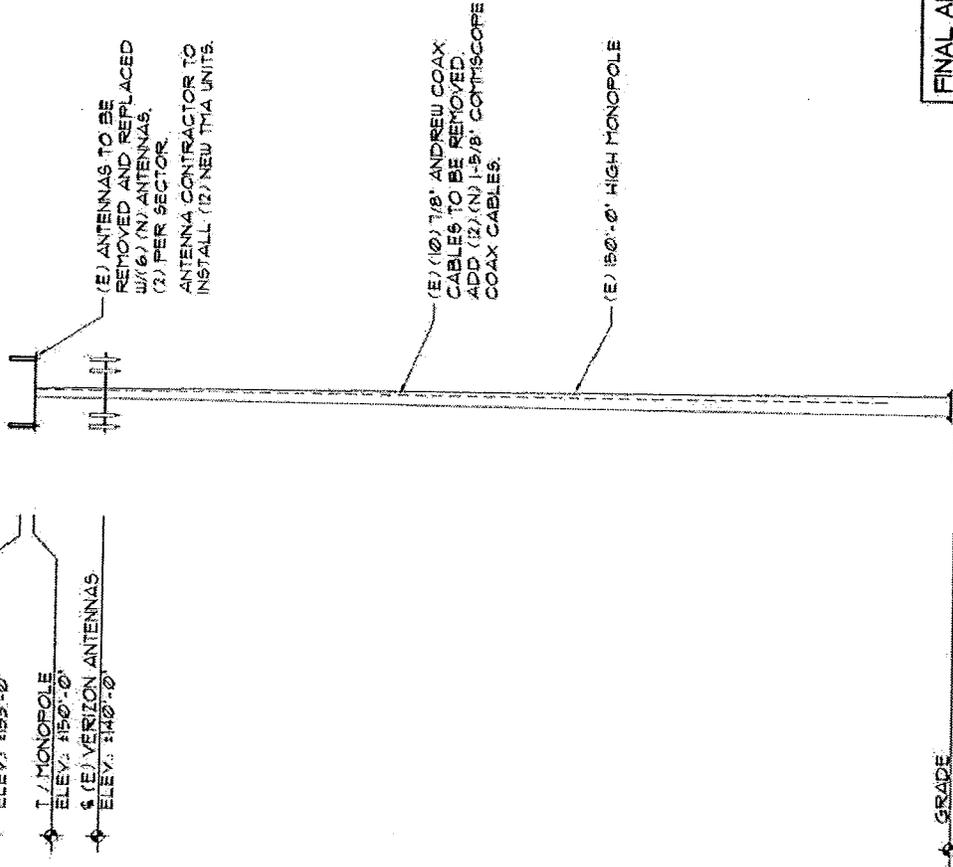
As the table demonstrates, the cumulative worst-case exposure would be approximately 14.55% of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the facility would be within applicable standards.

Site # 2012								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	153	1935.0	1	500.0	820.0	7.7	1000	0.77%
Cingular TDMA	153	880.0	16	100.0	2624.0	24.6	587	4.19%
Cingular 800	153	880.0	2	296.0	970.9	9.1	587	1.55%
Cingular 1900	153	1900.0	2	427.0	1400.6	13.1	1000	1.31%
Verizon 800	140	880.0	9	200.0	2952.0	33.0	587	5.63%
Verizon 1900	140	1900.0	3	200.0	984.0	11.0	1000	1.10%
TOTAL								14.55%

Structural Analysis: *Structural Analysis attached.*



6 (N) CINGULAR ANTENNAS
 ELEV: 153'-0"
 1 MONOPOLE
 ELEV: 150'-0"
 6 (E) VERIZON ANTENNAS
 ELEV: 140'-0"



GRADE
 ELEV: 0'-0"

FINAL ANTENNA CONFIGURATION
 (6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
 (12) 1-5/8" DIA. COAX CABLES
 (12) TMA5

1 TOWER ELEVATION
 1" = 30'-0"





ISSUED FOR CSC REVIEW		RR	JZ	JZ	CINGULAR WIRELESS	
SCOPING REVIEW		ML	JZ	JZ	SITE # 2012	
REVISION DESCRIPTION		BY		CHK/APP'D	SITE NAME: NORTH HAVEN	
SCALE: 1" = 30'-0"		CHECKED BY: JZ		DRWING NO: ML	DRAWING NUMBER	
					2012	
					KEY	
					0	

10 July 2006

Honorable Kevin J. Kopetz
First Selectman, Town of North Haven
18 Church Street
North Haven, CT 06473

**RE: Notice of Exempt Modification – Existing Cingular
Telecommunications Tower Facility at 15 (aka 8) Dwight Street,
North Haven, Connecticut**

Dear Mr. Kopetz:

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 153’ above ground level. Cingular will remove the existing cables and replace them with twelve (12) 1 5/8” diameter coaxial cables. Cingular will also remove the existing tower mounted amplifiers and replace them with twelve (12) new units, locating them at the same height as the antennas.

In summary, the final antenna configuration at 15 (aka 8) Dwight Street will include:

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

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

James Nelson Kise, AIA / AICP / PP

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

John R. Gibbons, AIA / AICP

Philip E. Scott, RA

Suzanna Barucco

LaVern Browne

Katherine E. Cowing, LEED

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.ksk1.com

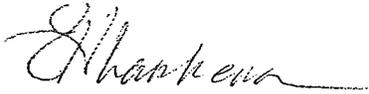
Statutory Considerations

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 monopole 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 North Haven 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

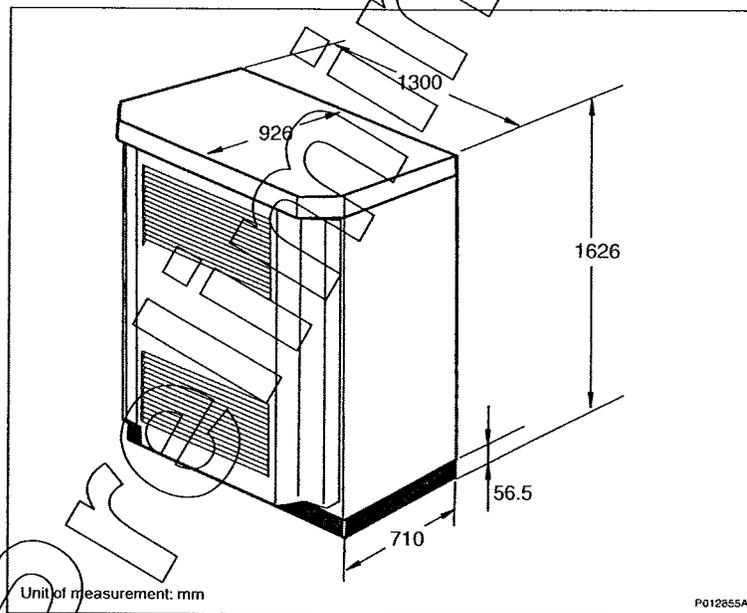


Figure 2 RBS 3106 Dimensions

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 7036
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

THE POWER IN WIRELESS®

 **Powerwave**
technologies

806-960/1710-2170 MHz

Dual Broadband Antenna

Electrical Specifications (Preliminary)

Frequency band (MHz)	806-960	1710-2170
Gain, ± 0.5 dB (dBi)	13.5	16.0
Polarization	Dual linear $\pm 45^\circ$	
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	$85 \pm 5^\circ$	$85 \pm 5^\circ$
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)	<2.0	
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)	<2.0	
Electrical downtilt range (adjustable)	0° to 10°	0° to 8°
Vertical -3 dB beamwidth	$14.3 \pm 2.0^\circ$	$6.6 \pm 1^\circ$
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")

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COVERAGE AND CAPACITY

TECHNOLOGY LEADERSHIP

GLOBAL PARTNER

INTEGRATED SOLUTIONS

QUALITY AND RELIABILITY

Tower Mounted Amplifier

Dual Band 1900 MHz with 850 MHz Bypass

1900/850 MHz

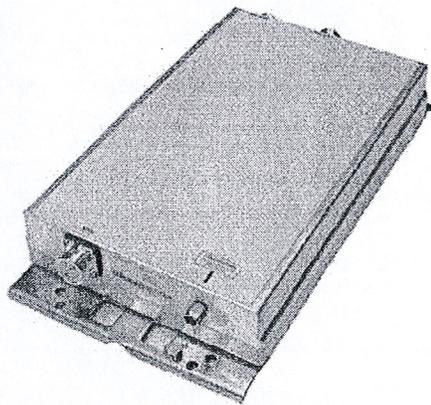
Part Number:
LGP 214nn

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:

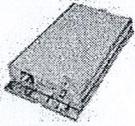
- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

ANTENNA
SYSTEMS

BASE STATION
SYSTEMS

COVERAGE
SYSTEMS

Tower Mounted Amplifier



1900/850 MHz

Technical Specifications

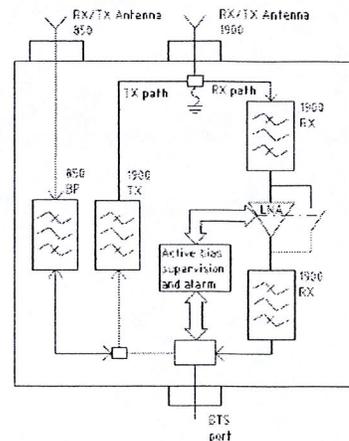
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency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



D031-08422 Rev. A Pg. 2 of 2

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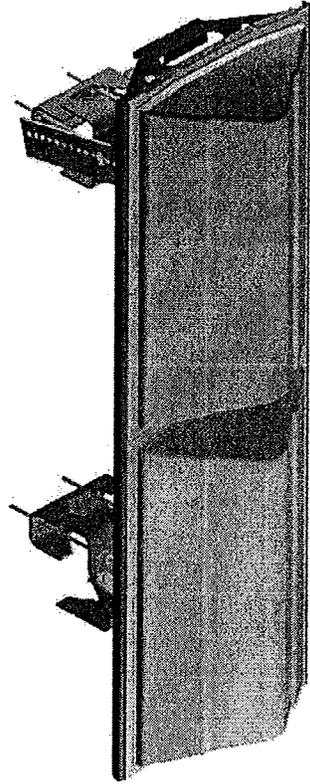
Specifications for Existing Antennas

DUO4-8670



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



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

DUO1417- 8686-xy

DUO1417-8686-xyi

Options

x=Electrical Downtilt at 800 MHz in Degrees (0, 2, 4 or 6)

y=Electrical Downtilt at 1900 MHz in Degrees (0 or 4)

i=Dual Band Combiner included as an internal device

CSS Antenna, Inc.
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www.cssantenna.com