

# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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[www.ct.gov/csc](http://www.ct.gov/csc)

December 11, 2008

Steven L. Levine  
Real Estate Consultant  
New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067-3900

RE: **EM-CING-042-081110-** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 94 East High Street, East Hampton, Connecticut.

Dear Mr. Levine:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- That base plate stiffeners are installed per the recommendations of the structural engineer;
- A post-construction tower rating of not more than 100 percent is achieved; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the reinforcements have been properly completed and a post-construction tower rating of not more than 100 percent has been achieved.

The proposed modifications are to be implemented as specified here and in your notice dated November 7, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.



Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in black ink, appearing to read "S. Derek Phelps". The signature is written in a cursive style with a large initial "S" and "P".

S. Derek Phelps  
Executive Director

SDP/CDM/laf

c: The Honorable Christopher J. Goff, Chairman Town Council, Town of East Hampton  
Alan H. Bergren, Town Manager, Town of East Hampton  
James Carey, Zoning Enforcement Officer, Town of East Hampton  
Crown Castle

**Perrone, Michael**

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**From:** Levine, Steven [SL3764@att.com]  
**Sent:** Wednesday, November 19, 2008 3:11 PM  
**To:** Perrone, Michael  
**Subject:** New Structural for East Hampton Site  
**Attachments:** 1053 Structural.pdf

Mike,

Per our discussion, here is an updated structural analysis for High Street, East Hampton. Our EM notice was filed on 11/10 using an older structural. Please accept this new structural as our actual submission.

Thanks.

**AT&T Mobility / New Cingular Wireless PCS, LLC**

*Steve Levine*

500 Enterprise Drive, 3rd Fl., Rocky Hill, CT 06067

Real Estate Consultant

Office 860-513-7636

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Date: **November 19, 2008**

Tara Brewer  
Crown Castle USA Inc.  
3530 Toringdon Way, Suite 300  
Charlotte, NC 28277  
(704) 405-6546



GPD Associates  
520 South Main Street  
Akron Ohio 44311  
(330) 572-2199  
[aherkenhoff@gpdgoup.com](mailto:aherkenhoff@gpdgoup.com)

**Subject:** **Structural Analysis Report**

**Carrier Designation:** **AT&T Mobility Co-Locate**  
**Carrier Site Number:** 1053  
**Carrier Site Name:** East Hampton - High Street

**Crown Castle Designation:** **Crown Castle BU Number:** 876352  
**Crown Castle Site Name:** Richard Wall  
**Crown Castle JDE Job Number:** 111640  
**Crown Castle Work Order Number:** 237974

**Engineering Firm Designation:** **GPD Associates Project Number:** 2008281.73

**Site Data:** **94 East Hight Street, East Hampton, CT 06424, Middlesex County**  
**Latitude 41° 35' 14.2", Longitude -72° 29' 19.6"**  
**120 Foot EEI Modified Monopole Tower**

Dear Ms. Tara Brewer,

GPD Associates is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 309453, in accordance with application 70092, revision 3.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment **Sufficient Capacity**  
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

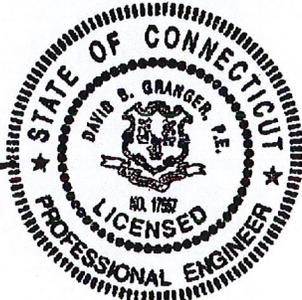
The analysis has been performed in accordance with the TIA/EIA-222-F standard based upon a wind speed of 85 mph fastest mile.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at GPD Associates appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

David B. Granger P.E.  
Connecticut # 17557



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## 1) INTRODUCTION

The existing modified 120' monopole has 18 sides and is evenly tapered from 43.5" (flat-flat) at the base to 15.0" (flat-flat) at the top. It has three major sections, connected with slip joints. The structure is galvanized and has no tower lighting.

This existing 120 ft modified Monopole tower was designed by Engineering Endeavors Incorporated. The tower was originally designed for an 89 mph wind speed with 1/2" radial ice (25% reduction) in accordance with TIA/EIA-222-F. Modifications include the addition of 12 stiffeners to the existing base plate.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 73.6 mph with 0.5 inch ice thickness and 60 mph under service loads.

**Table 1 - Proposed Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
95	97	6	Powerwave	7770.00	3	1-5/8	1
		6	Powerwave	LGP 17201 TMA's			
		6	Powerwave	LGP 21903 Diplexers			

Notes:

- Existing coax at 95' level to be reused for proposed equipment. See Appendix B for proposed coax layout.

**Table 2 - Existing and Reserved Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
118	130	1	Decibel	DB264-A	2	7/8	
		1	Decibel	DB420-A	1	1/2	
	126	1	Decibel	ASP-2011			
	120	6	Ems Wireless	RR65-12-05DBL	18	1-5/8	2
		3	Ems Wireless	RR90-17-02DP			
118		1		12' LP Platform			
105	108	6	Decibel	DB844H80-XY	12	1-1/4	
		6	Decibel	DB948F85T2E-M			
	105	1		12' LP Platform			
95	97	3	ADC	CG-1900DD-FULL-DIN			3
		3	ADC	CG-1900DD-FULL-DIN			1,3
		3	CSS	DBC-750			
		9	CSS	DUO1417-8686	6	1-5/8	3
	3	CSS	DUO1417-8686	3	1-5/8	1,3	
95		1		12' LP Platform			
75	76	1	Lucent	KS24019-L112A	1	1/2	
	75	1		2' Standoff			

Notes:

- Reserved Equipment
- Both the existing and the MLA equipment have been considered. In this case, the MLA loading controls.
- Existing Equipment to be removed and replaced by the proposed equipment. Existing Coax to be reused.

**Table 3 - Design Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
117.5	117.5	12	Decibel	DB980 Antennas			
		1		LP Platform			
105	105	12	Swedcom	ALP 9212 Antennas			
		1		LP Platform			
95	95	12	Swedcom	ALP 9212 Antennas			
		1		LP Platform			

### 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

Document	Remarks	Reference	Source
Manufacturer's Drawings	Engineering Endeavors, Inc. Job # 5069, dated 5/28/99	Doc ID# 2122777	Crown DMZ
Foundation Drawings	Engineering Endeavors, Inc. Job # 5069, dated 5/28/99	Doc ID# 2122776	Crown DMZ
Geotechnical Report	Clough, Harbour, & Associates LLP, Project # 7472.07.03, dated 5/20/99	Doc ID# 1532964	Crown DMZ
Modification Drawings	Semaan Engineering Solutions, Site # CT03XC335, dated 4/8/05	Doc ID# 2055770	Crown DMZ
Previous Structural Analysis	Semaan Engineering Solutions, Site # CT03XC335, dated 3/18/05	Doc ID# 2021545	Crown DMZ

#### 3.1) Analysis Method

RISATower (version 5.3.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

#### 3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

This analysis may be affected if any assumptions are not valid or have been made in error. GPD Associates should be notified to determine the effect on the structural integrity of the tower.

#### 4) ANALYSIS RESULTS

**Table 5 - Section Capacity (Summary)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 86.292	Pole	TP22.9x15x0.1875	1	-6.58	677.92	82.8	Pass
L2	86.292 - 42.6287	Pole	TP33.46x21.7243x0.3125	2	-12.06	1648.19	80.8	Pass
L3	42.6287 - 0	Pole	TP43.5x31.651x0.3125	3	-18.69	2111.22	87.5	Pass
							Summary	
						Pole (L3)	87.5	Pass
						Rating =	87.5	Pass

**Table 6 - Tower Component Stresses vs. Capacity - LC1**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods		66.6%	Pass
1	Base Plate		69.8%	Pass
1, 2	Base Foundation (Reinforcing)		92.9%	Pass

<b>Structure Rating (max from all components) =</b>	<b>92.9%</b>
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

#### 4.1) Recommendations

The design of the modified tower and its foundation are satisfactory for the proposed loading and do not require further modifications.

## 5) DISCLAIMER OF WARRANTIES

GPD ASSOCIATES has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD ASSOCIATES in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD ASSOCIATES does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD ASSOCIATES provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

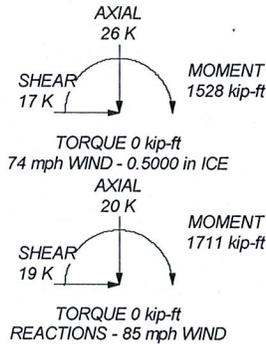
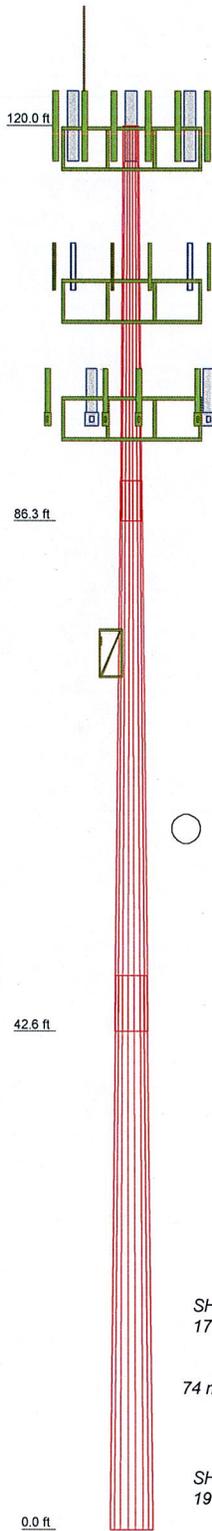
The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD ASSOCIATES, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc. have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD ASSOCIATES makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD ASSOCIATES will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD ASSOCIATES pursuant to this report will be limited to the total fee received for preparation of this report.

**APPENDIX A**  
**RISA TOWER OUTPUT**

Section	1	2	3
Length (ft)	33.71	47.08	47.38
Number of Sides	18	18	18
Thickness (in)	0.1875	0.3125	0.3125
Lap Splice (ft)	3.42	4.75	
Top Dia (in)	15.0000	21.7243	31.6510
Bot Dia (in)	22.9000	33.4600	43.5000
Grade		A572-65	
Weight (K)	1.3	4.3	6.0



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB420-A	118	(2) DB844H80-XY w/ Mount Pipe	105
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	118	12' LP Platform	105
DB264-A	118	(2) LGP21903	95
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	118	(2) 7770.00 w/ Mount Pipe	95
ASP-2011	118	(2) LGP 17201	95
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	118	(2) LGP21903	95
12' LP Platform	118	(2) 7770.00 w/ Mount Pipe	95
(2) DB948F85T2E-M w/ Mount Pipe	105	(2) LGP 17201	95
(2) DB844H80-XY w/ Mount Pipe	105	(2) LGP 17201	95
(2) DB948F85T2E-M w/ Mount Pipe	105	12' LP Platform	95
(2) DB844H80-XY w/ Mount Pipe	105	2'-0" - STANDOFF	75
(2) DB948F85T2E-M w/ Mount Pipe	105	KS24019-L112A	75

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

### TOWER DESIGN NOTES

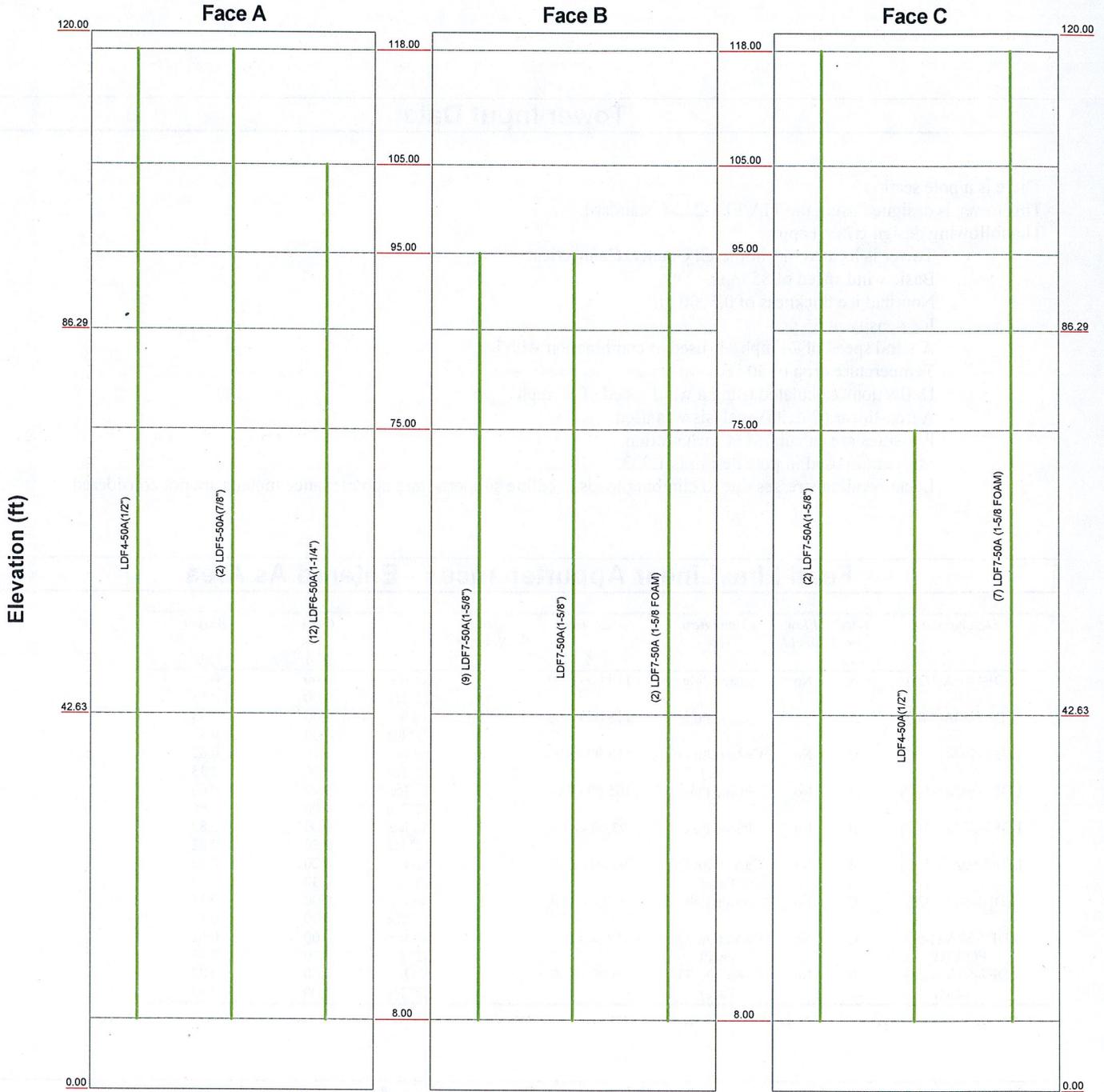
1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 87.5%

<b>GPD Associates</b> 520 South Main Street Akron Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job: RICHARD WALL BU# 876352</b> Project: 2008281.73 Client: Crown Castle USA Code: TIA/EIA-222-F Path: G:\Telecom\2008281\73\RIS\AIBU# 876352 RICHARD WALL.enr	Drawn by: aherkenhoff Date: 11/19/08 Scale: NTS Dwg No. E-1
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# Feedline Distribution Chart

## 0' - 120'

— Round   
 — Flat   
 — App In Face   
 — App Out Face   
 — Truss Leg



<b>GPD Associates</b>		Job: <b>RICHARD WALL BU# 876352</b>	
520 South Main Street		Project: <b>2008281.73</b>	
Akron Ohio 44311		Client: Crown Castle USA	Drawn by: aherkenhoff
Phone: (330) 572-2100		Code: TIA/EIA-222-F	Date: 11/19/08
FAX: (330) 572-2101		Path: G:\Telecom\2008281\73\RISAIBU# 876352 RICHARD WALL.en	Scale: NTS
			Dwg No. E-7

<b>RISATower</b>  <b>GPD Associates</b> 520 South Main Street Akron Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> RICHARD WALL BU# 876352	<b>Page</b> 1 of 4
	<b>Project</b> 2008281.73	<b>Date</b> 09:46:41 11/06/08
	<b>Client</b> Crown Castle USA	<b>Designed by</b> aherkenhoff

**Tower Input Data**

There is a pole section.  
This tower is designed using the TIA/EIA-222-F standard.  
The following design criteria apply:  
Tower is located in Middlesex County, Connecticut.  
Basic wind speed of 85 mph.  
Nominal ice thickness of 0.5000 in.  
Ice density of 56 pcf.  
A wind speed of 74 mph is used in combination with ice.  
Temperature drop of 50 °F.  
Deflections calculated using a wind speed of 60 mph.  
A non-linear (P-delta) analysis was used.  
Pressures are calculated at each section.  
Stress ratio used in pole design is 1.333.  
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

**Feed Line/Linear Appurtenances - Entered As Area**

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C <sub>A</sub> A		Weight plf
						No Ice	1/2" Ice	
LDF4-50A(1/2")	A	No	Inside Pole	118.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
LDF5-50A(7/8")	A	No	Inside Pole	118.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	118.00 - 8.00	2	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
LDF6-50A(1-1/4")	A	No	Inside Pole	105.00 - 8.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
LDF7-50A(1-5/8")	B	No	Inside Pole	95.00 - 8.00	9	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	95.00 - 8.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
LDF4-50A(1/2")	C	No	Inside Pole	75.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
LDF7-50A (1-5/8 FOAM)	C	No	CaAa (Out Of Face)	118.00 - 8.00	7	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	95.00 - 8.00	2	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33

**Discrete Tower Loads**

<b>RISATower</b>  <b>GPD Associates</b> 520 South Main Street Akron Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	RICHARD WALL BU# 876352	<b>Page</b>	2 of 4
	<b>Project</b>	2008281.73	<b>Date</b>	09:46:41 11/06/08
	<b>Client</b>	Crown Castle USA	<b>Designed by</b>	aherkenhoff

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
DB420-A	A	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	3.33 5.99	3.33 5.99	0.03 0.04
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	8.64 9.29	6.95 8.13	0.07 0.13
DB264-A	B	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	3.16 5.69	3.16 5.69	0.04 0.05
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	8.64 9.29	6.95 8.13	0.07 0.13
ASP-2011	C	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	1.06 1.93	1.06 1.93	0.00 0.01
(3) SPRINT MLA_ANTENNA w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	118.00	No Ice 1/2" Ice	8.64 9.29	6.95 8.13	0.07 0.13
(2) DB844H80-XY w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	3.10 3.48	5.15 5.83	0.03 0.07
(2) DB948F85T2E-M w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	2.13 2.49	4.45 5.12	0.03 0.06
(2) DB844H80-XY w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	3.10 3.48	5.15 5.83	0.03 0.07
(2) DB948F85T2E-M w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	2.13 2.49	4.45 5.12	0.03 0.06
(2) DB844H80-XY w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	3.10 3.48	5.15 5.83	0.03 0.07
(2) DB948F85T2E-M w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	105.00	No Ice 1/2" Ice	2.13 2.49	4.45 5.12	0.03 0.06
(2) 7770.00 w/ Mount Pipe	A	From Leg	3.68	1.56	23.0000	95.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10
(2) LGP 17201	A	From Leg	3.68	1.56	23.0000	95.00	No Ice 1/2" Ice	1.95 2.13	0.52 0.64	0.03 0.04
(2) LGP21903	A	From Leg	3.68	1.56	23.0000	95.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
(2) 7770.00 w/ Mount Pipe	B	From Leg	3.68	1.56	21.0000	95.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10
(2) LGP 17201	B	From Leg	3.68	1.56	21.0000	95.00	No Ice 1/2" Ice	1.95 2.13	0.52 0.64	0.03 0.04
(2) LGP21903	B	From Leg	3.68	1.56	21.0000	95.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
(2) 7770.00 w/ Mount Pipe	C	From Leg	3.68	1.56	24.0000	95.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10

<b>RISATower</b>  <b>GPD Associates</b> 520 South Main Street Akron Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> RICHARD WALL BU# 876352	<b>Page</b> 3 of 4
	<b>Project</b> 2008281.73	<b>Date</b> 09:46:41 11/06/08
	<b>Client</b> Crown Castle USA	<b>Designed by</b> aherkenhoff

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight	
			Horz	Lateral Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
(2) LGP 17201	C	From Leg	3.68		24.0000	95.00	No Ice 1/2" Ice	1.95 2.13	0.52 0.64	0.03 0.04
(2) LGP21903	C	From Leg	3.68		24.0000	95.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
KS24019-L112A	C	From Leg	2.00		30.0000	75.00	No Ice 1/2" Ice	0.16 0.22	0.16 0.22	0.01 0.01
2'-0" - STANDOFF	C	From Leg	1.00		30.0000	75.00	No Ice 1/2" Ice	1.36 2.45	1.36 2.45	0.02 0.04
12' LP Platform	C	None			0.0000	118.00	No Ice 1/2" Ice	25.00 30.00	25.00 30.00	1.50 1.75
12' LP Platform	C	None			0.0000	105.00	No Ice 1/2" Ice	25.00 30.00	25.00 30.00	1.50 1.75
12' LP Platform	C	None			0.0000	95.00	No Ice 1/2" Ice	25.00 30.00	25.00 30.00	1.50 1.75

### Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	120 - 86.292	42.328	36	3.3063	0.0057
L2	89.7087 - 42.6287	23.114	36	2.5335	0.0009
L3	47.3787 - 0	6.207	36	1.2439	0.0001

### Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
118.00	DB420-A	36	40.983	3.2605	0.0054	9589
105.00	(2) DB844H80-XY w/ Mount Pipe	36	32.378	2.9542	0.0030	3195
95.00	(2) 7770.00 w/ Mount Pipe	36	26.164	2.6901	0.0015	1916
75.00	KS24019-L112A	36	15.733	2.0412	0.0002	1612

### Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	120 - 86.292	84.646	11	6.6151	0.0163
L2	89.7087 - 42.6287	46.256	11	5.0704	0.0029

<b>RISATower</b>  <b>GPD Associates</b> 520 South Main Street Akron Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> RICHARD WALL BU# 876352	<b>Page</b> 4 of 4
	<b>Project</b> 2008281.73	<b>Date</b> 09:46:41 11/06/08
	<b>Client</b> Crown Castle USA	<b>Designed by</b> aherkenhoff

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L3	47.3787 - 0	12.431	11	2.4910	0.0005

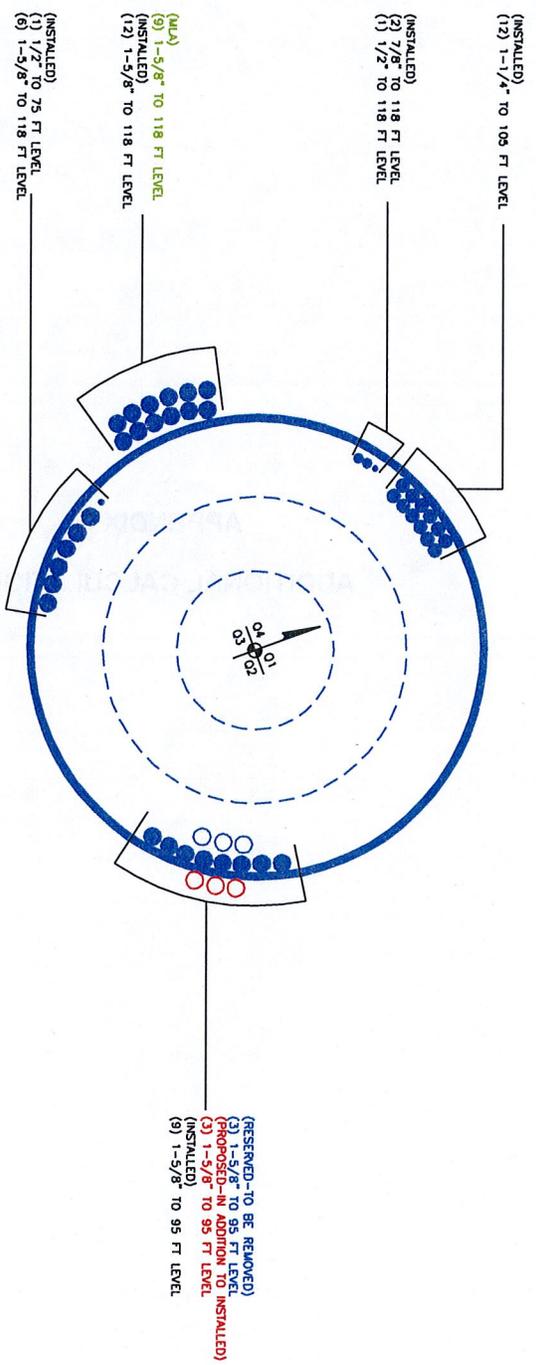
### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.00	DB420-A	11	81.959	6.5210	0.0154	4884
105.00	(2) DB844H80-XY w/ Mount Pipe	11	64.769	5.8959	0.0088	1626
95.00	(2) 7770.00 w/ Mount Pipe	11	52.352	5.3725	0.0046	973
75.00	KS24019-L112A	11	31.496	4.1412	0.0005	813

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
L1	120 - 86.292	Pole	TP22.9x15x0.1875	1	-6.58	677.92	82.8	Pass
L2	86.292 - 42.6287	Pole	TP33.46x21.7243x0.3125	2	-12.06	1648.19	80.8	Pass
L3	42.6287 - 0	Pole	TP43.5x31.651x0.3125	3	-18.69	2111.22	87.5	Pass
Summary								
Pole (L3)							87.5	Pass
RATING =							87.5	Pass

**APPENDIX B**  
**BASE LEVEL DRAWING**



BUSINESS UNIT: 876352 TOWER ID: C\_BASSELDEL

BASE LEVEL DRAWING

**LEGEND: FEEDLINES**

- SOLID BLUE CIRCLE DENOTES EXISTING FEEDLINE
- OPEN RED CIRCLE DENOTES PROPOSED FEEDLINE
- OPEN BLUE CIRCLE DENOTES RESERVED FEEDLINE
- x BLUE "x" DENOTES LOCATION NOT GIVEN

NOTE: ASSUME FEEDLINE ATTACHMENT HEIGHT TO TOWER STEEL AT 8-FEET ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED

SCALE:	1" = 1'-0"
	1

**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

## Anchor Rod and Base Plate Stresses

RICHARD WALL BU# 876352

Overturing Moment =	1711.00	k*ft
Axial Force =	20.00	k
Shear Force =	19.00	k

Anchor Rods		
Pole Diameter =	43.5	in
Outer Diameter (BP) =	58	in
Number of Rods =	12	
Rod Grade (Fy) =	75	ksi
Rod Circle =	52	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in <sup>2</sup>
Max Tension on Rod =	129.95	kips
Max Compression on Rod =	133.28	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	66.6%	<b>OK</b>

Base Plate		
Plate Strength (Fy) =	60	ksi
Plate Thickness =	1.75	
No. of Stiffeners =	12	
$w_{calc}$ =	13.6136	in
$e$ =	4.25	in
$w_{max}$ =	17	in
$w$ =	13.6136	in
$l$ =	7.25	in
$b$ =	13.6136	in
$l/b$ =	0.533	
$M_x$ =	8.634	kip-in
$M_y$ =	21.362	kip-in
$M_{max}$ =	21.362	kip-in
$f_c$ =	1.3504	ksi
$f_b$ =	41.85	ksi
$F_b$ =	60	ksi
Base Plate Capacity =	69.8%	<b>OK</b>

CAISSON Version 4.46 Wed Nov 19 13:59:45 2008  
 U.W. Short Course - 1998

\*\*\*\*\*  
 \* PIER FOUNDATIONS ANALYSIS AND DESIGN - (C) 1995, POWER LINE SYSTEMS, INC. \*  
 \* \*\*\*\*\*

\*\*\* ANALYSIS IDENTIFICATION : RICHARD WALL BU# 876352  
 NOTES : 2008281.73

\*\*\* PIER PROPERTIES CONCRETE STRENGTH (ksi) = 3.00 STEEL STRENGTH (ksi) = 60.00  
 DIAMETER (ft) = 6.000 DISTANCE FROM TOP OF PIER TO GROUND LEVEL (ft) = 1.00

*** SOIL PROPERTIES	LAYER	TYPE	THICKNESS (ft)	DEPTH AT TOP OF LAYER (ft)	DENSITY (pcf)	CU (psf)	KP	PHI (degrees)
	1	C	4.00	0.00	120.0	0.0		
	2	S	2.50	4.00	120.0		3.392	33.00
	3	S	4.50	6.50	120.0		3.392	33.00
	4	S	24.00	11.00	120.0		3.392	33.00

\*\*\* DESIGN (FACTORED) LOADS AT TOP OF PIER MOMENT (ft-k) = 2395.0 VERTICAL (k) = 25.3 SHEAR (k) = 25.3  
 ADDITIONAL SAFETY FACTOR AGAINST SOIL FAILURE = 1.54

\*\*\* CALCULATED PIER LENGTH (ft) = 20.000

\*\*\* CHECK OF SOILS PROPERTIES AND ULTIMATE RESISTING FORCES ALONG PIER

TYPE	TOP OF LAYER BELOW TOP OF PIER (ft)	THICKNESS (ft)	DENSITY (pcf)	CU (psf)	KP	FORCE (k)	ARM (ft)
C	1.00	4.00	120.0	0.0		0.00	3.00
S	5.00	2.50	120.0		3.392	96.17	6.35
S	7.50	4.50	120.0		3.392	288.50	9.94
S	12.00	2.92	120.0		3.392	266.77	13.52
S	14.92	5.08	120.0		3.392	-612.47	17.59

\*\*\* SHEAR AND MOMENTS ALONG PIER

DISTANCE BELOW TOP OF PIER (ft)	WITH THE ADDITIONAL SAFETY FACTOR SHEAR (k)	WITH THE ADDITIONAL SAFETY FACTOR MOMENT (ft-k)	WITHOUT ADDITIONAL SAFETY FACTOR SHEAR (k)	WITHOUT ADDITIONAL SAFETY FACTOR MOMENT (ft-k)
0.00	39.0	3688.9	25.3	2395.4
2.00	39.0	3766.8	25.3	2446.0

4.00	39.0	3844.8	25.3	2496.6
6.00	6.0	3906.8	3.9	2536.9
8.00	-81.9	3835.8	-53.2	2490.8
10.00	-199.2	3559.6	-129.3	2311.4
12.00	-345.7	3019.6	-224.5	1960.8
14.00	-521.5	2157.3	-338.7	1400.8
16.00	-498.2	1035.5	-323.5	672.4
18.00	-263.8	268.7	-171.3	174.5
20.00	0.0	-0.0	0.0	-0.0

\*\*\* TOTAL REINFORCEMENT PCT = 0.50 REINFORCEMENT AREA (in^2) = 20.36  
 \*\*\* USABLE AXIAL CAP. (k) = 25.3 USABLE MOMENT CAP. (ft-k) = 2622.0

\*\*\* US Standard Re-Bars (Select one of the following):

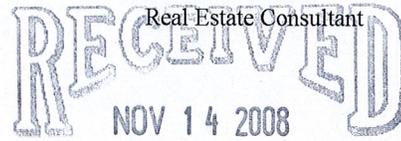
102 BARS #4	(AREA = 0.20 in^2	DIA = 0.500 in)	AT SPACING (in) = 1.91
66 BARS #5	(AREA = 0.31 in^2	DIA = 0.625 in)	AT SPACING (in) = 2.95
47 BARS #6	(AREA = 0.44 in^2	DIA = 0.750 in)	AT SPACING (in) = 4.14
34 BARS #7	(AREA = 0.60 in^2	DIA = 0.875 in)	AT SPACING (in) = 5.73
26 BARS #8	(AREA = 0.79 in^2	DIA = 1.000 in)	AT SPACING (in) = 7.49
21 BARS #9	(AREA = 1.00 in^2	DIA = 1.128 in)	AT SPACING (in) = 9.28
17 BARS #10	(AREA = 1.27 in^2	DIA = 1.270 in)	AT SPACING (in) = 11.46
14 BARS #11	(AREA = 1.56 in^2	DIA = 1.410 in)	AT SPACING (in) = 13.91
10 BARS #14	(AREA = 2.25 in^2	DIA = 1.693 in)	AT SPACING (in) = 19.48

\*\*\* PRESSURE UNDER CAISSON DUE TO DESIGN AXIAL LOAD (psf) = 894.8



New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

Steven L. Levine  
Real Estate Consultant



CONNECTICUT  
SITING COUNCIL

HAND DELIVERED

November 14, 2008

Honorable Daniel F. Caruso, Chairman,  
and Members of the Connecticut Siting Council  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 94 East High Street, East Hampton (owner, Crown Castle)

Dear Chairman Caruso and Members of the Council:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") capability, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile (GSM) communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General

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

1. The height of the overall structure will be unaffected. Modifications to the existing site include all or some of the following as necessary to bring the site into conformance with the plan:

- Replacement of existing panel antennas with new antennas or, installation of additional antennas of a size required to accommodate UMTS.
- Installation of small tower mount amplifiers ("TMA's") and/or diplexers to the platform on which the panel antennas are mounted to enhance signal reception.
- Installation of additional or larger coaxial cables as required.
- Installation of an additional equipment cabinet in existing shelters, or on existing or enlarged concrete pads.
- Radome enlargement for flagpole and "stick" structures to accommodate larger antennas and additional associated equipment.

None of these modifications will extend the height of the tower.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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

Please feel free to call me at (860) 513-7636 with questions concerning this matter. Thank you for your consideration.

Sincerely,

Steven L. Levine  
Real Estate Consultant

Attachments



EM-CING-042-081110

New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

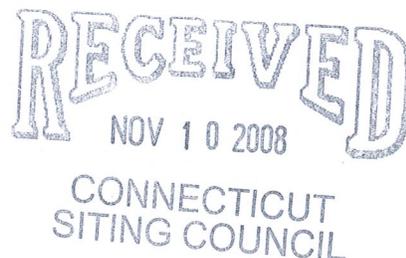
Steven L. Levine  
Real Estate Consultant

ORIGINAL

HAND DELIVERED

November 7, 2008

Honorable Daniel F. Caruso, Chairman,  
and Members of the Connecticut Siting Council  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051



Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 94 East High Street, Hampton (owner, Crown Castle)

Dear Chairman Caruso and Members of the Council:

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Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility

will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected. Modifications to the existing site include all or some of the following as necessary to bring the site into conformance with the plan:

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- Radome enlargement for flagpole and "stick" structures to accommodate larger antennas and additional associated equipment.

None of these modifications will extend the height of the tower.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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

Please feel free to call me at (860) 513-7636 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine  
Real Estate Consultant

Attachments

**NEW CINGULAR WIRELESS  
Equipment Modification**

94 East High Street, East Hampton  
Site Number 1053  
Exempt Modifications approved 6/02, 6/03, 12/06

**Tower Owner/Manager:** Crown Castle

**Equipment Configuration:** Monopole

**Current and/or Approved:** Twelve CSS DUO-1417-8686 panel antennas @ 95 ft AGL  
Six TMA's and three combiners @ 95 ft  
Twelve runs 1 5/8 inch coax cable  
7 x 12 ft concrete pad with outdoor cabinets

**Planned Modifications:** Remove existing antennas and TMA's  
Install six Powerwave 7770 antennas (or equivalent) @ 95 ft  
Install six TMA's and six diplexers @ 95 ft  
Install 5 x 7 ft pad extension with new cabinet for UMTS

**Power Density:**

Worst-case calculations for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the tower, of approximately 42 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 49.4 % of the standard.

**Existing**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users *							34.58
Cingular GSM*	95	1900 Band	2	427	0.0340	1.0000	3.40
Cingular GSM*	95	880 - 894	2	296	0.0236	0.5867	4.02
<b>Total</b>							<b>42.0%</b>

\* Per CSC records

## Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users *							34.58
Cingular UMTS	95	880 - 894	1	500	0.0199	0.5867	3.40
Cingular GSM *	95	1900 Band	2	427	0.0340	1.0000	3.40
Cingular GSM *	95	880 - 894	4	296	0.0472	0.5867	8.04
<b>Total</b>							<b>49.4%</b>

\* Per CSC records

### Structural information:

The attached structural analysis for Nextel's installation on this tower in 2005 accounts for 12 CSS antennas, 6 TMA's, 3 combiners, and 12 lines 1 5/8 inch coax in the Cingular equipment inventory. Additionally, AT&T (old) had 6 antennas and 12 lines coax included in the 2005 structural analysis; these items have since been removed.

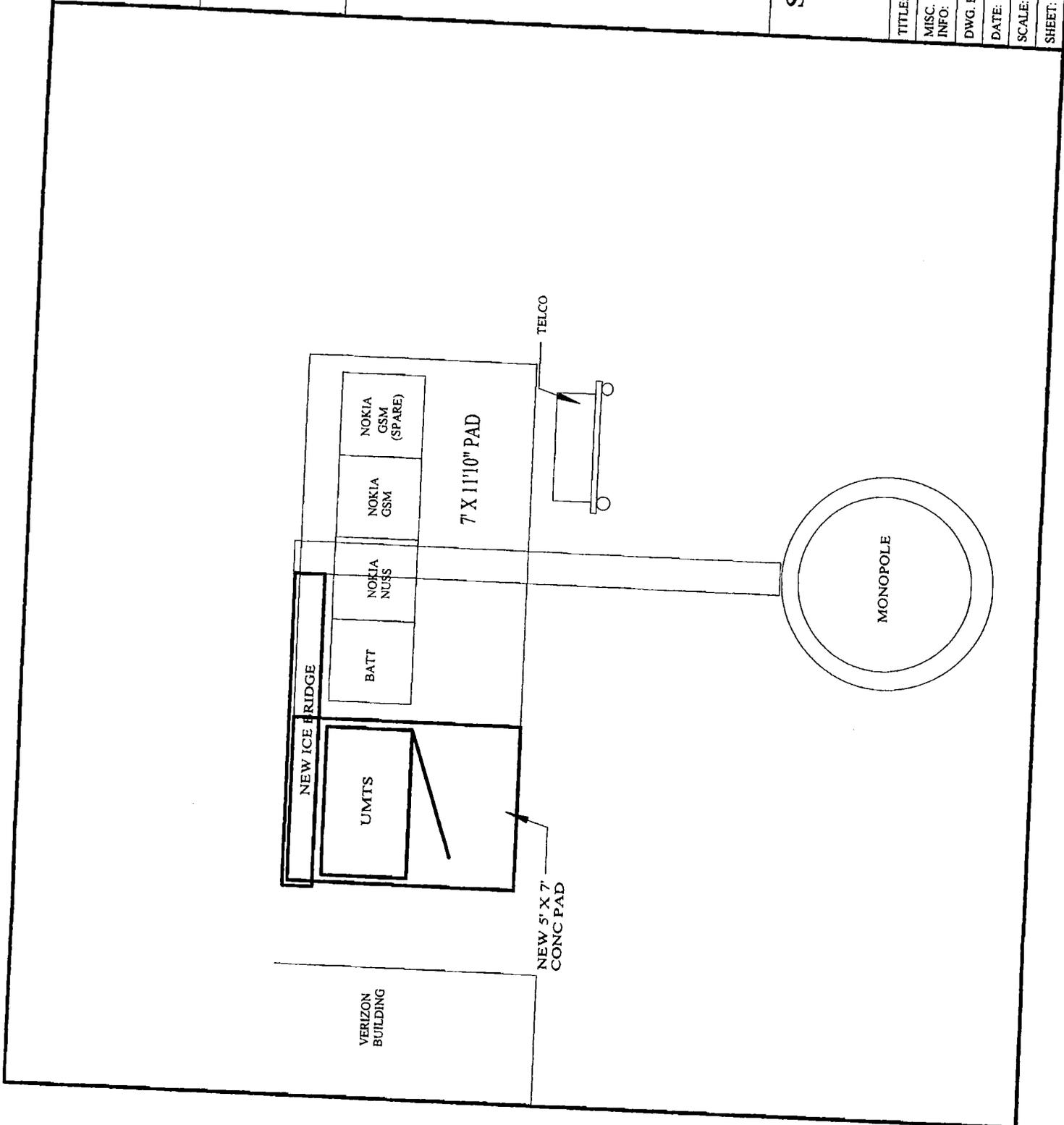
As shown on the attached loading comparison, the *original configuration represents both greater weight and greater wind loading* than the proposed new array of 6 Powerwave antennas, 6 TMA's, 6 diplexers, and 12 lines 1 5/8 inch coax, and with the AT&T (old) equipment removed.

Accordingly, Nextel's 2005 structural is still valid for assessing the structural impacts of the proposed equipment modifications and demonstrates that there is adequate structural capacity to accommodate the proposed Cingular modifications.



SITE NUMBER  
1053  
SITE NAME  
East Hampton

TITLE:	EQUIPMENT PLAN
MISC. INFO:	
DWG. BY:	SOB
DATE:	07/07/08
SCALE:	N.T.S.
SHEET:	1 OF 1



**Loading Comparison - 1053 - E. Hampton**

		<u>QTY</u>	<u>Length</u>	<u>Width</u>	<u>Depth</u>	<u>Weight</u>	<u>Sail Area</u>	<u>Total Sail Area</u> <u>(sq in)</u>	<u>Total Weight</u> <u>(lbs)</u>
<b>Existing (per 2005 structural analysis)</b>									
Antennas - Cingular	CSS DUO 1417-8686	12	48	14	9	30.8	672	8,064	370
TMA's - Cingular	ADC CG1900W850	6	11.7	11.3	2.8	15.4	132.21	793	92
Combiners - Cingular	CSS DBC-750	3	7.9	6.6	1.3	4.9	52.14	156	15
coax - Cingular	1 5/8 inch	12	95			0.8	0		912
Antennas - old AT&T	Allgon 7250	6	61	6	2	15	366	2,196	90
coax - old AT&T	1.25 inch	12	85			0.69			704
								<b>11,210</b>	<b>2,183</b>
<b>Proposed -- AT&amp;T (old) equipment removed</b>									
Antennas	Powerwave 7770	6	55	11	5	35	605	3,630	210
TMA's	Powerwave LGP 21401	6	14	9	2.7	19	126	756	114
Diplexers	Powerwave LGP 13519	6	4.4	6.3	3	5.3	27.72	166	32
coax	twelve 1 5/8 inch	12	95			0.8	0		912
								<b>4,552</b>	<b>1,268</b>

Antennas	CSS DUO 1417-8686	48	14	9	30.8	672
	Powerwave 7770	55	11	5	35	605
	APL 8013	52	13	1	8.2	676
	DAPA 58000	53	6	3	11	318
	Allgon 7250	61	6	2	15	366
TMA's	ADC CG1900W850	11.7	11.3	2.8	15.4	132.21
	Powerwave LGP 21401	14	9	2.7	19	126
Diplexers	CSS DBC-750	7.9	6.6	1.3	4.9	52.14
	Powerwave LGP 13519	4.4	6.3	3	5.3	27.72
	Powerwave LGP 21903	4.4	6.3	3	5.3	27.72
coax	7/8 inch				.34 / ft	
	1 1/4 inch				.69 / ft	
	1 5/8 inch				.8 / ft	



**New Cingular Wireless PCS, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

**Steven L. Levine**  
Real Estate Consultant

November 7, 2008

Robert G. Drewry, Town Manager  
Town of East Hampton  
Town Hall 20 East High Street  
East Hampton, CT 06424

Re: Telecommunications Facility – 94 East High Street

Dear Mr. Drewry:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System (“UMTS”) capability, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“Cingular”) will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (“R.C.S.A.”) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular’s proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes Cingular’s proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council’s procedures, please call me at (860) 513-7636 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine  
Real Estate Consultant

Enclosure

1053

1079 N. 204<sup>th</sup> Avenue  
Elkhorn, NE 68022  
Ph: 402-289-1888  
Fax: 402-289-1861

**SEMAAN ENGINEERING SOLUTIONS**

**120 ft EEI Monopole  
Structural Analysis and  
Baseplate Modification Package  
(Revision)**

**Prepared for:  
Sprint Sites USA  
1 International Blvd  
Mahwah, NJ 07645**

**Site: CT03XC335  
Nextel  
East Hampton, CT**

**April 8, 2005**

Mr. Alberto Arroyo  
Sprint Sites USA  
1 International Blvd  
Mahwah, NJ 07645

**Re: Site Number CT03XC335 – East Hampton, CT.**

Dear Mr. Arroyo:

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

**Description of Structure:**

The structure is a 120 ft EEI Monopole.

Refer to EEI job #5069 dated May 28, 1999 for a detailed description of the structure.

**Method of analysis:**

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. The analysis was performed in conformance with **EIA/TIA-222-F and local building codes for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed (fastest mile)**. Wind is applied to the structure, accessories and antennas.

**Structure loading:**

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

Elev. (ft)	Qty	Antennas and Mounts	Coax	Owner
120.0	1	APC-301 On Sprint's Low Profile platform	(1) 1/2	Municipality
	1	DB264 On Same Platform	(1) 7/8	
	1	DB420 On Same Platform	(1) 7/8	
120.0	12	DB980H90 On a Low Profile platform	(12) 1-5/8	Sprint
113.0	6	<b>RR65-12-05DBL Mounted on (3) T-Arms</b>	<b>(15) 1-5/8</b>	<b>Nextel</b>
105.0	6	DB844H90 On a Low Profile Platform	(6) 1-5/8	Verizon
	6	DB948F On Same Low Profile Platform	(6) 1-5/8	
95.0	6	TMA-DD 1900 On a Low Profile Platform		Cingular
	12	DUO1417-8686 On Same Low Profile Platform	(12) 1-5/8	
	3	DBC-750 combiner On Same Low Profile Platform		
85.0	6	Allgon 7250 Strap Mounted	(12) 1-1/4	AT&T

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

**All transmission lines are assumed running inside of pole shaft.**

**Results of Analysis:**

Refer to the attached Computer Summary sheets for detailed analysis results.

**Structure:**

The existing monopole is not structurally capable of supporting the existing and proposed antennas. The baseplate is overstressed and will require stiffeners. Refer to the attached drawing for additional information.

The maximum pole shaft usage is: 94.8% (shaft) 145.0% (baseplate without stiffeners) 81.0% (baseplate with stiffeners)

**Foundation:**

<b>Pole Reactions</b>	<b>Original Design Reactions</b>	<b>Current Analysis Reactions</b>	<b>% Of Design</b>
Moment (ft-kips)	1,667.90	1,856.58	111.3
Shear (kips)	18.89	20.30	107.5

The reactions calculated from the analysis exceed the ones indicated on the original structural design. However, upon reviewing the foundation documents, they were found to be adequate and therefore the foundation will not require modification.

**Review and Recommendations:**

Based on the analysis results, the existing structure **does not** meet the requirements per the EIATIA-222-F standards for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed. Only after the baseplate stiffeners have been installed and approved per the attached drawing will the monopole meet these requirements.

**Attachment:**

Drawing S-01, Revision 0, dated 04/06/2005.

**SEMAAN ENGINEERING SOLUTIONS**

1079 N.204th Avenue  
 Elkhorn, NE 68022  
 Phone: 402-289-1888  
 Fax: 402-289-1861

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Job Information	
Pole :	CT03XC335
Description :	
Client :	Sprint Sites USA - NJ
Location :	East Hampton, CT
Type :	18 Sides
Height (ft)	120.00
Base Elev (ft):	0.00
Taper:	0.245830 (in/ft)

Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	47.380	31.85	43.50	0.313	0.000	0.245830 65
2	47.080	22.07	33.64	0.313	57.000	0.245830 65
3	33.707	15.00	23.28	0.188	41.000	0.245830 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
120.000	120.000	12	DB980H90
120.000	120.000	1	Low Profile platform
120.000	129.040	1	DB420
120.000	130.750	1	DB264
120.000	130.000	1	APC-301
120.000	122.500	1	Lightning Rod, 5'
113.000	113.000	3	T-Arms
113.000	113.000	6	RR65-12-05DBL
105.000	105.000	6	DB948F
105.000	105.000	6	DB844H90
105.000	105.000	1	Low Profile Platform
95.000	95.000	3	DBC-750 combiner
95.000	95.000	12	DUO1417-8686
95.000	95.000	6	TMA-DD 1900
95.000	95.000	1	Low Profile Platform
85.000	85.000	1	Tri-Antenna Mount
85.000	85.000	6	Allgon 7250

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
85.00 mph Wind w/ No Ice	1,856.578	20.302	-17.714
73.61 mph Wind w/ 0.50 in Ice	1,631.102	17.180	-24.079

