



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](mailto:siting.council@ct.gov)

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

Daniel F. Caruso

Chairman

February 6, 2008

Steven L. Levine  
New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067

RE: **EM-CING-033-080103** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 201 Main Street, Cromwell, Connecticut.

Dear Mr. Levine:

At a public meeting held on January 24, 2008, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the modifications specified on page five of the structural analysis report dated October 19, 2007 and sealed by John Irving Mathis, P.E. are performed prior to the antenna swap and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated January 3, 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,

Daniel F. Caruso  
Chairman

DFC/MP/cm

c: The Honorable Jeremy J. Shingleton, First Selectman, Town of Cromwell  
Frederic Curtin, Zoning Enforcement Officer, Town of Cromwell  
Crown Castle



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

EM-CING-033-080103

Steven L. Levine  
Real Estate Consultant

ORIGINAL

HAND DELIVERED

January 3, 2008

RECEIVED  
JAN - 3 2008

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

CONNECTICUT  
SITING COUNCIL

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 201 Main Street, Cromwell (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 ("Cingular") 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 Cingular'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 of similar size, shape, and weight, or, installation of additional antennas of similar size, shape, and weight.
- 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.

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 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, 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

**CINGULAR WIRELESS  
Equipment Modification**

201 Main Street, Cromwell, CT  
Site Number 5272  
Former AT&T site  
Exempt Modification 3/21/02

**Tower Owner/Manager:** Crown Castle

**Equipment configuration:** Monopole

**Current and/or approved:** Three Allgon 7250 antennas @ 115 ft c.l.  
Six runs 1 5/8 inch coax  
Six TMA's @ 115 ft

**Planned Modifications:** Remove all existing antennas and TMA's  
Install three Powerwave 7770 antennas @ 115 ft c.l.  
Install 6 Powerwave TMA's @ 115 ft  
Install 6 x 8 ft raised concrete pad with railing  
Install two additional outdoor cabinets

**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 16.4 % 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 21.4 % 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 *							13.71
Cingular GSM *	115	1900 Band	4	250	0.0272	1.0000	2.72
<b>Total</b>							<b>16.4%</b>

\* Per CSC Records

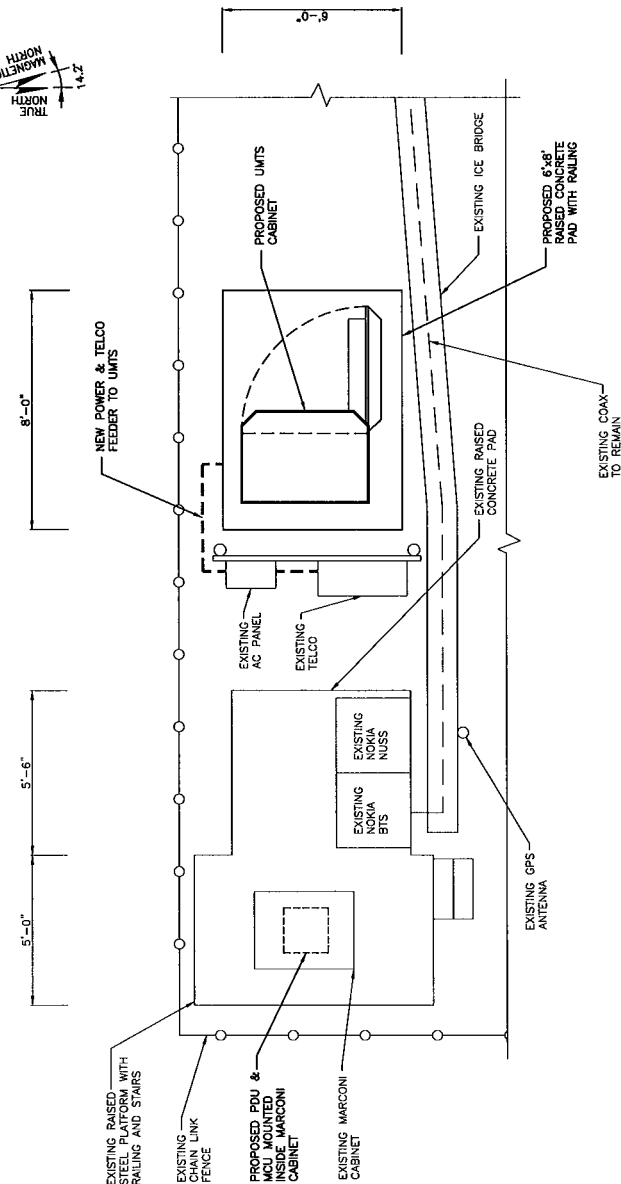
## Proposed

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 *							13.71
Cingular GSM	115	1900 Band	3	655	0.0534	1.0000	5.34
Cingular UMTS	115	880 - 894	1	500	0.0136	0.5867	2.32
<b>Total</b>							<b>21.4%</b>

\* Per CSC Records

### Structural information:

The attached structural analysis demonstrates that the baseplate and foundation currently do not have sufficient structural capacity to accommodate the proposed modifications. (Vertical Structures, 10/19/07) The analysis, however, includes tower modification plans that would bring the tower and foundation into full compliance. Cingular will implement these recommendations prior to performing the proposed equipment modifications. We respectfully request that the Council grant a conditional approval of Cingular's proposed modifications.



**EQUIPMENT PLAN  
OUTDOOR UMTS**  
SCALE: 1/2"=1'-0"



N.T.S.

**Hudson**  
Design Group, Inc.  
445 WOODDALE  
N. ANDOVER, MA 01854  
TEL: 978.352.5553  
FAX: 978.352.5556

**SIAT**  
communications

184 ROCKINGHAM ROAD, UNIT A  
LANCASHIRE, NH 03063

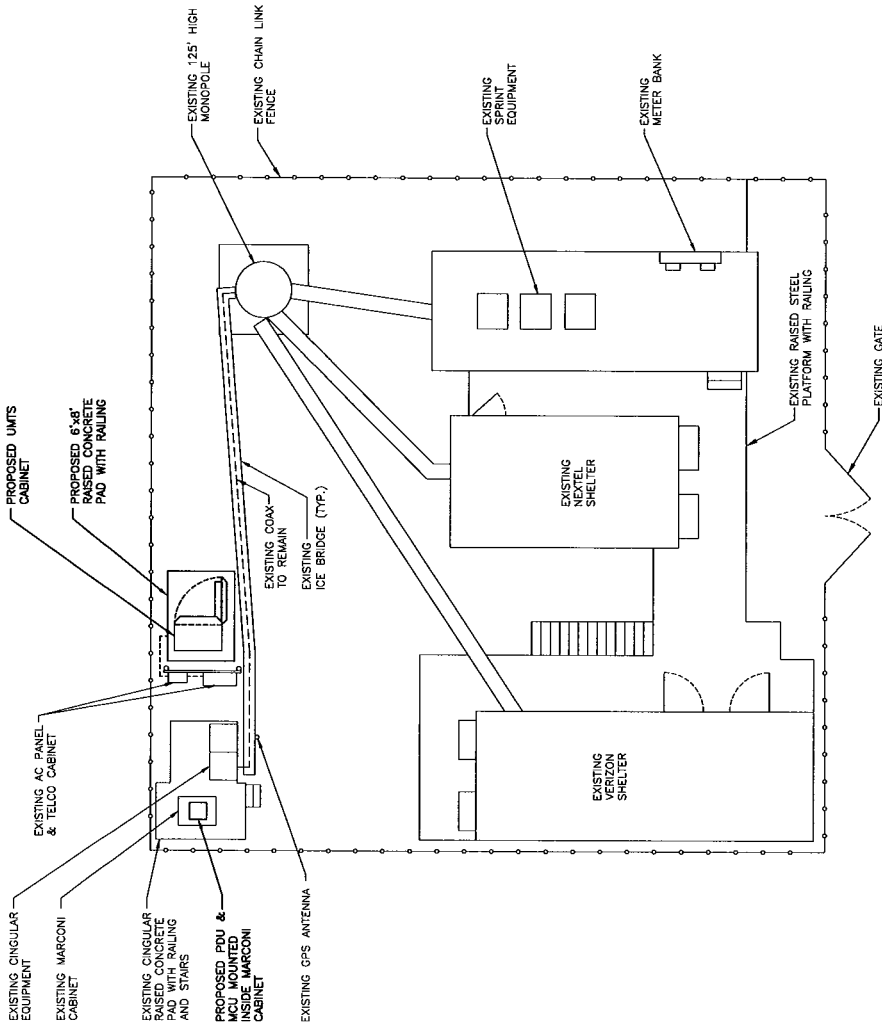
**SITE NUMBER: 5272**  
**SITE NAME: CROWELL SE**  
201 MAIN STREET  
CROWELL, CT 06415  
HARTFORD COUNTY

**Cingular**  
WIRELESS  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06867



NO.	DATE	BY	CHK'D BY	DESCRIPTION
1	02/02/07	BR	DC	CONSTRUCTION PLAN
0	02/27/07	BR	DC	ISSUED FOR CONSTRUCTION
NO.	DATE	BY	CHK'D BY	DESCRIPTION
SCALE: NOT SHOWN				
DESIGNED BY: BR				
DRAWN BY: BR				

GINGULAR WIRELESS  
EQUIPMENT PLAN  
UMTS (OUTDOOR)  
DRAWING NUMBER: A-1



**COMPOUND PLAN  
OUTDOOR UMITS**  
SCALE: 3/16"=1'-0"

0 2'-8" 5'-4" 10'-8" 16'-0"



NO.	DATE	BY	CHK'D BY	ISSUED FOR
1	07/05/07	BR	DC	CONSTRUCTION FINAL
2	08/23/07	BR	DC	ISSUED FOR CONSTRUCTION
3		BR	DC	REVISIONS
4		BR	DC	REVISIONS
5		BR	DC	REVISIONS
6		BR	DC	REVISIONS
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99		BR	DC	REVISIONS
100		BR	DC	REVISIONS

**cingular**  
WIRELESS  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

**SITE NUMBER: 5272**  
**SITE NAME: CROMWELL SE**  
201 MAIN STREET  
CROMWELL, CT 06416  
HARTFORD COUNTY

**SAI**  
communications  
184 ROCKINGHAM ROAD, UNIT A  
LONDONDERRY, NH 03053

**Hudson**  
Design Group, Inc.  
100 WASHINGTON ST., SUITE 200  
LONDONDERRY, NH 03053  
TEL: 603.883.5550  
FAX: 603.883.5550

**CINGULAR WIRELESS**  
COMPOUND PLAN  
UMITS (OUTDOOR)  
DRAWING NUMBER: C-1

JOB NUMBER: 5272-01

DATE: 07/05/07

BY: BR

DATE: 08/23/07

BY: BR

DATE: 08/23/07

BY: BR

DATE: 08/23/07

BY: BR

DATE: 08/23/07

BY: BR

DATE: 08/23/07

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BY: BR

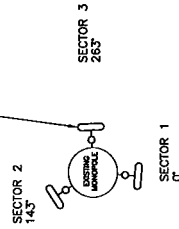
**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED ANTENNAS HAS BEEN DETERMINED PRIOR TO CONSTRUCTION.

**NOTE:\***  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

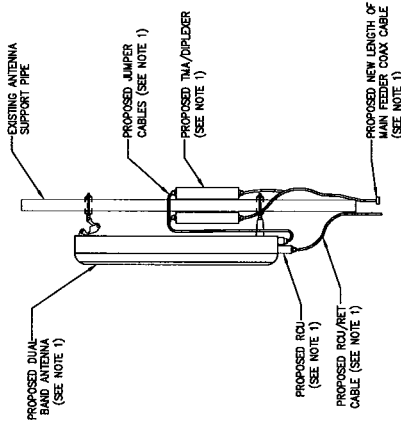
RF TABLE						
SECTOR NAME	ANTENNA MAKE & MODEL	ANTENNA COUNT	AZIMUTH CENTER	RAD CENTER	MECHANICAL DOWN/TILT	DIPLEXER COUNT
1	ALPHA LOP ALISON 770	1	0°	115'±	0*	0 EXIST. 0 PROP.
2	BETA LOP ALISON 770	1	143°	115'±	0*	0 EXIST. 0 PROP.
3	GAMMA LOP ALISON 770	1	263°	115'±	0*	0 EXIST. 0 PROP.



PROPOSED CINGULAR ANTENNAS TO REPLACE EXISTING (TYP. OF 3)

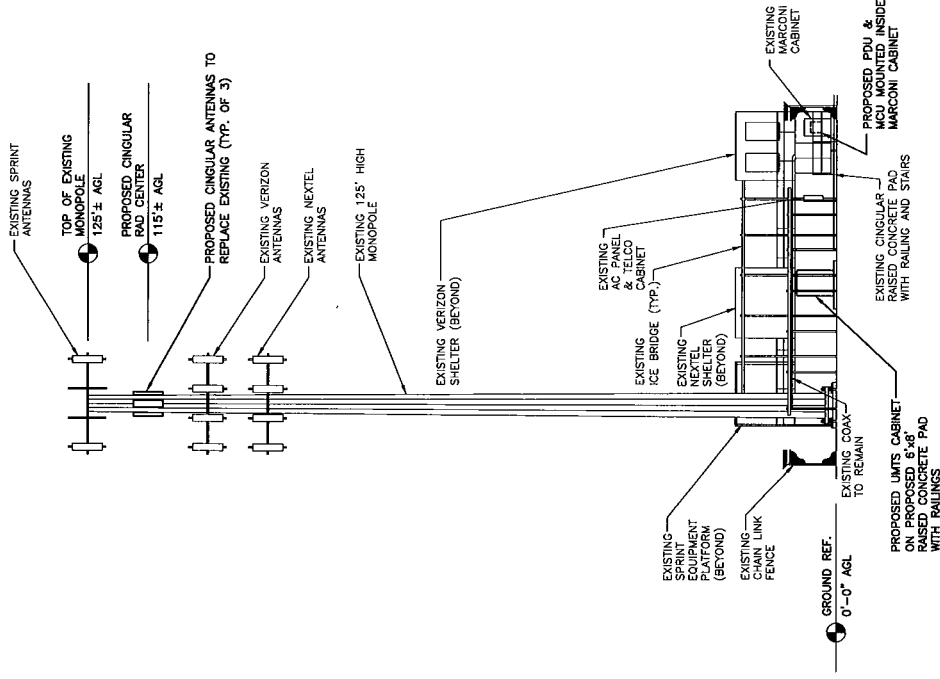


**PROPOSED ANTENNA PLAN VIEW**  
N.T.S.



**NOTES:**  
1. REFER TO RF CONRG & SECTOR SCHEMATICS FOR QUANTITY REQUIRED PER SECTOR

**PROPOSED ANTENNA DETAIL**  
N.T.S.



**PROPOSED SOUTH ELEVATION**

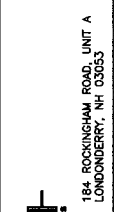
SCALE: 1"=10'-0" 0' 5"-0" 10'-0" 20'-0" 30'-0"



NO.	DATE	BY	REVISIONS
1	07/25/07	CONSTRUCTION FINAL	
0	05/21/07	ISSUED FOR CONSTRUCTION	
NO.	DATE	BY	REVISIONS
		DESIGNED BY: BR	
		DRAWN BY: BR	
		CHECKED BY: BR	
		DATE: 05/21/07	
		PROJECT NO: 5272.01	
		PROJECT NAME: CINGULAR WIRELESS ANTENNA LAYOUT AND ELEVATION LIMITS (INDOOR)	
		SHEET NO: A-2	



**SITE NUMBER: 5272**  
**SITE NAME: CROWWELL SE**  
201 MAIN STREET  
CROWWELL, CT 06416  
HARTFORD COUNTY







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

January 3, 2008

Honorable Jeremy Shingleton  
1<sup>st</sup> Selectman, Town of Cromwell  
Town Hall 41 West Street  
Cromwell, Connecticut 06416-2142

Re: Telecommunications Facility – 201 Main Street, Cromwell, CT

Dear Mr. Shingleton:

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



October 19, 2007

Eric Shumaker  
Crown Castle International  
46 Broadway  
Albany, NY 12204  
(518) 424-0830

Vertical Structures, Inc.  
309 Spangler Drive, Suite E  
Richmond, KY 40475  
(859) 624-8360  
ncoomes@verticalstructures.com

**Subject: Structural Analysis Report**

<b>Carrier Designation</b>	<b>Cingular Change-Out Carrier Site Number: 5272 Carrier Site Name: Cromwell SE-Main Street</b>
<b>Crown Castle Designation</b>	<b>Crown Castle BU Number: 876364 Crown Castle Site Name: Cromwell/First Line Emergenc Crown Castle JDE Job Number: 89675</b>
<b>Engineering Firm Designation</b>	<b>Vertical Structures Project Number: 2007-004-138</b>
<b>Site Data</b>	<b>201 Main Street, Cromwell, CT, Middlesex County Latitude 41°-35'-0.11", Longitude -72°-38'-59.14" 125' EEI Monopole Tower</b>

Dear Mr. Shumaker,

Vertical Structures is pleased to submit this structural analysis report to determine the structural integrity of the aforementioned 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 256864, and Application Number 45826, Revision 0. The purpose of the analysis is to determine the suitability of the tower for the following load case:

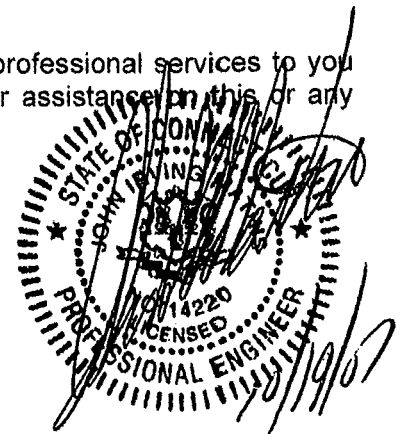
Load Case 1 (LC1): Proposed Equipment (Table 1) + Existing/Reserved Equipment (Table 2)

Based on our analysis we have determined the tower superstructure and foundation are sufficient for LC1, provided the modifications detailed in Appendix D are completed. This analysis has been performed in accordance with the TIA/EIA-222-F standard and local code requirements based upon an 80 MPH basic "fastest mile" wind speed, equivalent to a 100 MPH basic "3-second gust" wind speed per IBC Table 1609.3.1.

Vertical Structures appreciates the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

Nathan Coomes, P.E.  
Project Engineer



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## 1.) INTRODUCTION

The 125' tall monopole tower was designed and manufactured by EEI for Sprint PCS in 2000. The tower consists of three (3) 18-sided tapered polygonal tubes joined via slip joint connections and is founded on a 24' square by 3' thick mat bearing 6' below grade. The tower has been reworked to accommodate additional loading. For the purpose of this analysis, the modifications detailed in Appendix D are considered complete.

## 2.) ANALYSIS CRITERIA

The Cromwell/First Line Emergenc tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The proposed, existing and reserved antennas, cables and mounts considered in this analysis are listed in Tables 1 and 2. Applied forces in this study were derived from an 80 MPH basic "fastest mile" wind speed with no ice and a reduced 69 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The tower was originally designed for a 90 MPH basic "fastest mile" wind speed with no ice and a reduced 78 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The original design loads are unavailable. All cables are assumed to be routed in accordance with the drawing in Appendix B.

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

Mount Center Line Elevation (feet)	Number Of Antenna	Antenna Manufacturer	Antenna Model	Mount Manufacturer	Mount Model	Number Of Feed Lines	Feed Line Size (Inches)
115	3 + 3*	Powerwave Technologies	7770.00				
	6	Powerwave Technologies	LGP21401 TMA				

\*Indicates reserved equipment.

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

Mount Center Line Elevation (feet)	Number Of Antenna	Antenna Manufacturer	Antenna Model	Mount Manufacturer	Mount Model	Number Of Feed Lines	Feed Line Size (Inches)
125	6	Decibel	DB980H90	EEI	10'-8" L.P. Platform	6	1 5/8
115	3**	Allgon	7250		(3**) Pipe Mounts	6	1 5/8
	6**		TMA				
	12***		84" x 14" Panel		(3***) 12' T-Arms	12***	1 5/8
	6***	LGP Telecom	DDD 850/1900 TMA				
105	6	Decibel	DB844		12' L.P. Platform	12	1 5/8
	6	Decibel	DB948F85E-M				
95	12	Decibel	DB844H90E-XY		12' L.P. Platform	12	1 5/8

\*\*Indicates equipment to be removed.

\*\*\*Indicates MLA loading. MLA loading controls and is used in the analysis.

### 3.) ANALYSIS PROCEDURE

**Table 3 – Documents Provided**

Document	Remarks	Reference	Source
Online Application	Cingular Change Out Revision #0	45826	CCI iSite
Tower Drawing	EEI Drawing No. GS52064	1771100	CCI iSite
Foundation Drawing	EEI Drawing No. S6464-125	1613633	CCI iSite
Geotechnical Report	Dr. Clarence Welti Report Dated "August 2, 1999"	1614540	CCI iSite
Rework Information	Vertical Structures Job No. 2007-004-104	1956332	CCI iSite
Rework Drawings	Vertical Structures Job No. 2007-004-138	N/A	Appendix D

#### 3.1) Analysis Methods

RISA Tower (Version 5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases. All loads were computed in accordance with the ANSI/EIA/TIA-222-F or the local building code requirements. 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 manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and any referenced drawings.
4. When applicable, transmission cables are considered to be structural components for calculating wind loads, as allowed by TIA/EIA-222-F.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and Vertical Structures should be allowed to review any new information to determine its effect on the structural integrity of the tower.

#### 4.) ANALYSIS RESULTS

**Table 4 – Tower Component Stresses vs. Modified Capacity (LC1)**

Notes	Component	Elevation (feet)	% Capacity	Pass/Fail
<b>RISA Tower Analysis Summary:</b>				
	Pole (L1)	124.7 – 84.9	78.7	Pass
1	Pole (L2)	84.9 – 40.3	103.0	Pass
	Pole (L3)	40.3 – 0.0	93.7	Pass
<b>Additional Component Analysis Summary:</b>				
2	Anchor Bolts (Tension)		80.8	Pass
2	Base Plate and Gussets (Bending)		81.6	Pass
2	Foundation (Compared to Allowable Loads)		98.1	Pass
<b>Structure Rating =</b>			<b>103.0</b>	<b>Pass</b>

- 1) Indicates overstress of less than 5% and is considered acceptable based on the analysis procedure used.  
 2) Indicates calculations supporting % capacity are included in Appendix C.

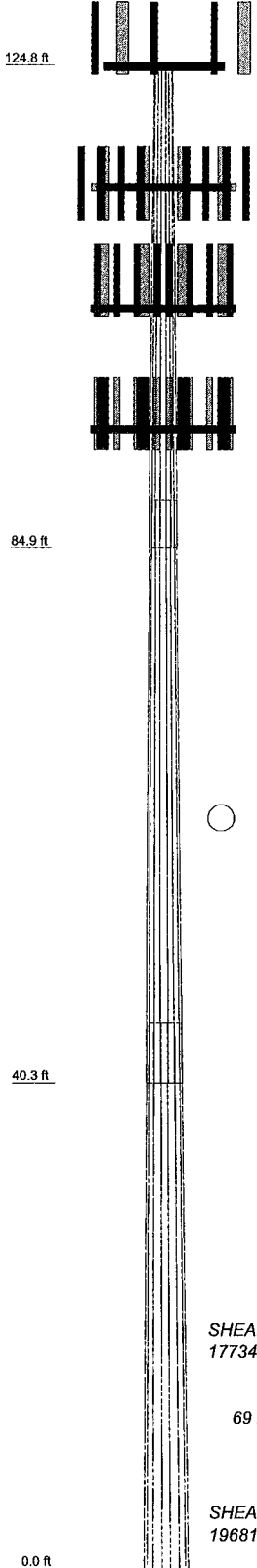
#### 4.1) Required Modifications

Modifications (A) and (B) are required to remedy the deficiencies identified in Vertical Structures Job No. 2007-004-065. Required modification drawings are provided in Appendix D. If requested, Vertical Structures will supply the material necessary to make the required modifications.

- (A) Reinforce the base plate.
- (B) Reinforce the foundation.

## APPENDIX A

Section	1	2	3
Length (ft)	39.86	48.46	45.36
Number of Sides	18	18	18
Thickness (in)	0.1875	0.2500	0.3125
Lap Splice (ft)			5.02
Top Dia (in)	18.5000	25.8736	34.6164
Bot Dia (in)	27.0865	36.1854	44.2500
Grade	A572-65	A572-65	A572-65
Weight (lb)	1824.7	4027.1	5989.8
			11841.5



**DESIGNED APPURTENANCE LOADING**

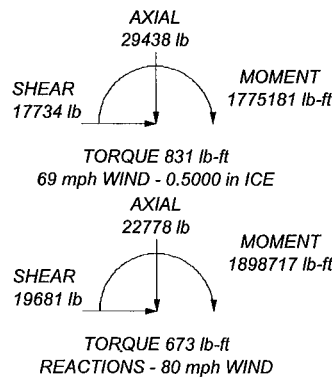
TYPE	ELEVATION	TYPE	ELEVATION
EEl 10'-8" Low-Profile Platform	125	12' (4" Pipe) T-Arm (VSI) (Cingular)	115
EEl Monopole Platform Ladder (VSI)	125	(4) 84" x 14" panel w/ mount pipe (VSI) (Cingular)	115
(2) DB980H90 w/Mount Pipe	125	(2) LGP DDD 850/1900 TMA (Cingular)	115
(2) 6' x 2" Antenna Mount Pipe (VSI)	125	12' L.P. Platform (VSI)	105
(2) DB980H90 w/Mount Pipe	125	(2) DB844H90-XY w/Mount Pipe	105
(2) 6' x 2" Antenna Mount Pipe (VSI)	125	(2) DB948F85E-M w/Mount Pipe	105
(2) DB980H90 w/Mount Pipe	125	(2) DB844H90-XY w/Mount Pipe	105
(2) 6' x 2" Antenna Mount Pipe (VSI)	125	(2) DB948F85E-M w/Mount Pipe	105
12' (4" Pipe) T-Arm (VSI) (Cingular)	115	(2) DB844H90-XY w/Mount Pipe	105
(4) 84" x 14" panel w/ mount pipe (VSI) (Cingular)	115	(2) DB948F85E-M w/Mount Pipe	105
(2) LGP DDD 850/1900 TMA (Cingular)	115	12' Low Profile Platform (VSI)	95
12' (4" Pipe) T-Arm (VSI) (Cingular)	115	(4) DB844H90E-XY w/Mount Pipe	95
(4) 84" x 14" panel w/ mount pipe (VSI) (Cingular)	115	(4) DB844H90E-XY w/Mount Pipe	95
(2) LGP DDD 850/1900 TMA (Cingular)	115	(4) DB844H90E-XY w/Mount Pipe	95

**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 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 103%



<b>Vertical Structures, Inc.</b> 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job: <b>Cromwell/First Line Emergenc, CT BU#876364</b>
	Project: <b>Vertical Structures Job No. 2007-004-138</b>
	Client: Crown Castle      Drawn by: ncoomes      App'd:
	Code: TIA/EIA-222-F      Date: 10/19/07      Scale: NTS
Path:	Dwg No. <b>E-1</b>



## **APPENDIX D**

TABLE OF CONTENTS	
SHEET NO.	DESCRIPTION
SHEET 1	MASTER DRAWING INCLUDING NOTES
SHEET 2	REPLACE GUSSET WELDS (0')
TF2007004138-11	FOUNDATION REWORK
TF2007004138-12	FOUNDATION REWORK

**STRUCTURAL MODIFICATIONS:**

THIS DRAWING DEPICTS THE REWORK REQUIRED TO REMEDY THE DEFICIENCIES FOUND IN THE CROMWELL/ FIRST LINE EMERGENC, CT TOWER PER THE REPORT PUBLISHED BY VERTICAL STRUCTURES ON 8-15-07, JOB# 2007-004-065.

- A. REINFORCE THE BASE PLATE.
- B. REINFORCE THE FOUNDATION.

**MATERIAL SPECIFICATION NOTES:**

- 1. ALL MATERIAL AND HARDWARE CAN BE PURCHASED FROM VERTICAL STRUCTURES, INC.
- 2. FABRICATION DETAILS FOR ANY PARTS NOT PURCHASED FROM VERTICAL STRUCTURES, INC. MUST BE APPROVED BY VERTICAL STRUCTURES, INC. BEFORE USE. REVIEW MAY INCLUDE RECEIPT OF MILL CERTIFICATIONS WHEN NECESSARY.
- 3. NO FIELD FABRICATION OF TOWER REWORK MATERIAL IS ALLOWED. ALL STEEL TO BE SHOP FABRICATED.
- 4. IT IS THE RESPONSIBILITY OF THE MATERIAL SUPPLIER TO GUARANTEE PROPER FITUP. ALL DIMENSIONS USED IN FABRICATION DETAILS MUST BE FIELD VERIFIED.

**WELDING SPECIFICATION NOTES:**

- 1. SURFACES TO BE CLEARED OF GALVANIZATION BEFORE FIELD WELDING. ANY MATERIAL
- 2. ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CCUSA POLICY "CUTTING AND WELDING SAFETY PLAN" (DOC# ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT. PRIOR TO BIDDING REWORK, CONTRACTOR MUST HAVE IN THEIR POSSESSION AND HAVE READ THIS DOCUMENT. CONSULT CROWN CASTLE FOR COPIES OF THIS DOCUMENT.

ADDITIONAL WELDING NOTE:  
A. WELDER TO USE E70XX RODS.

**TECHNICAL SPECIFICATION NOTES:**

- 1. CONTRACTOR: CALL VERTICAL STRUCTURES AT (859) 624-8360 TO MAKE SURE YOU HAVE THE LATEST REVISION OF THIS DRAWING. CONTACT THE ENGINEER CONCERNING ANY CHANGES OR MODIFICATIONS THAT MAY BE REQUIRED DUE TO THE EXISTING CONDITIONS.
- 2. ALL BOLTS 1/2" OR LESS TO BE INSTALLED WITH H OR 2H NUTS. ALL BOLTS GREATER THAN 1/2" TO BE INSTALLED WITH 2H NUTS. LOCKING MECHANISM FOR BOLTS TO BE PALNUTS OR LOCKWASHERS.
- 3. ALL U-BOLTS TO BE INSTALLED WITH 2H NUTS AND LOCKWASHERS.
- 4. ANY HARDWARE REMOVED FROM THE EXISTING TOWER MUST BE REPLACED WITH NEW HARDWARE OF EQUAL SIZE AND QUALITY UNLESS NOTED OTHERWISE.
- 5. AFTER FIELD MODIFICATIONS OF ANY STEEL MEMBERS, COAT EXPOSED STEEL SURFACES WITH TWO COATS OF SHERWIN WILLIAMS PART #143-0255 ZINC CLAD COATING, CONTAINING 97% ZINC DUST TO RESTORE THE GALVANIZED PROTECTION ON THE MEMBERS. IF REQUIRED, PAINT ALL AREAS AFFECTED OR NEW STEEL WITH MATCHING TOWER PAINT.
- 6. FINISHING SPECIFICATIONS - ALL MATERIAL TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:  
A. FABRICATED MATERIAL - ASTM A153.  
B. HARDWARE - ASTM A475.  
C. GUY WIRE - ASTM A475
- 7. ELEVATIONS SHOWN ARE NOMINAL AND NOT EXACT.

**CONTRACT ADMINISTRATION NOTES:**

- 1. PER CROWN POLICY, ALL MODIFICATIONS DEPICTED ON THESE DRAWINGS MUST BE INSPECTED BY VERTICAL STRUCTURES, INC. TO EXECUTE THIS SERVICE. VERTICAL STRUCTURES WILL REQUIRE A WRITTEN PURCHASE ORDER AND ONE CALENDAR WEEK PRIOR NOTICE OF AN INSPECTION. THE CONTRACTOR SHALL ALSO GIVE VERIFICATION 24 HOURS IN ADVANCE OF A SCHEDULED REQUEST FOR INSPECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THESE REQUIREMENTS ARE MET.
- 2. INSPECTIONS OF ABOVE GRADE MODIFICATIONS SHALL BE PERFORMED AT THE CONCLUSION OF THE WORK. BELOW GRADE OR HIDDEN INSTALLATIONS SUCH AS REBAR OR ANCHORS SHALL BE INSPECTED PRIOR TO THE PLACEMENT OF CONCRETE.
- 3. VERTICAL STRUCTURES WILL PROVIDE AN ENGINEERING REVIEW OF PART FABRICATION DETAIL DRAWINGS PRIOR TO MATERIAL FABRICATION AT THE DISCRETION OF CROWN CASTLE PROJECT MANAGEMENT. VERTICAL STRUCTURES WILL REQUIRE A PURCHASE ORDER AND A COMPLETE DRAWING PACKAGE TO PERFORM THIS WORK. VERTICAL STRUCTURES WILL SUBMIT A REPORT TO THE CONTRACTOR WITHIN TWO BUSINESS DAYS AFTER RECEIPT OF THE DRAWINGS AND PURCHASE ORDER.

125'

85'

40'

0' ———— 0': REPLACE HORIZONTAL GUSSET PLATE WELDS PER SHEET 2.  
0' ———— 0': REINFORCE THE FOUNDATION PER SHEETS TF2007004138-11 & 12.

A	ORIGINAL RELEASE	10-9-07	SWH
REV.	DESCRIPTION	DATE	BY



P.O. Box 1488  
Richmond, KY 40476  
Phone: (859) 624-8360  
Fax: (859) 624-8369  
Email: [engineering@verticalstructures.com](mailto:engineering@verticalstructures.com)

FOR

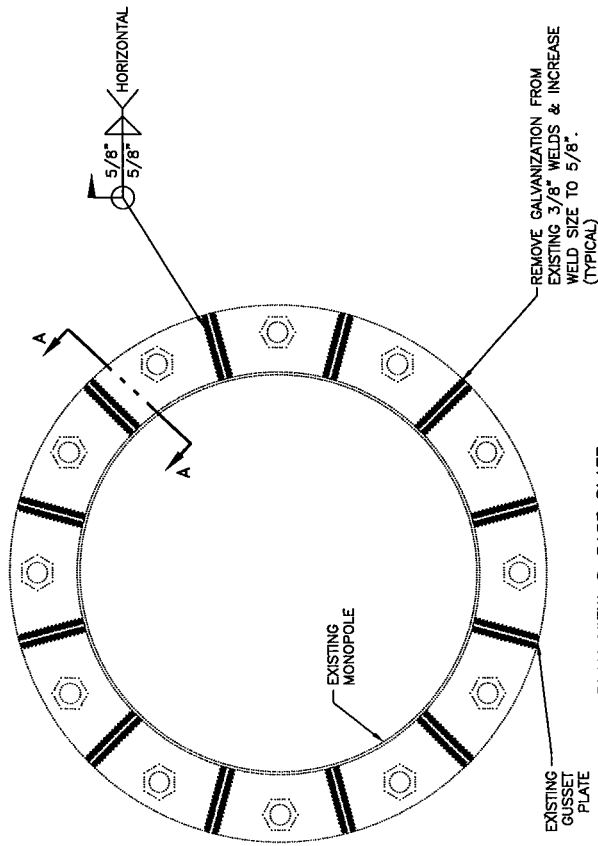
**CROWN CASTLE**

2007 MODIFICATIONS  
TOWER REWORK FOR A  
125' EEI MONOPOLE TOWER  
SITE: CROMWELL, CT

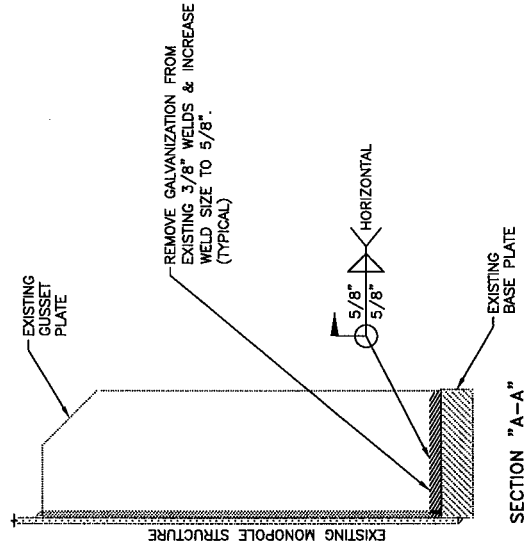
SHEET 1 OF 2	B	TA2007004138-11	SCALE: NONE
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CROWN CASTLE BU# 876364	
DRAFTSPERSON: S. HARRIS	DATE 10-9-07
CHK'D BY:	DATE
ENGR:	DATE

NOTE:  
 1. AFTER FIELD WELDING OF ANY STEEL MEMBERS, COAT EXPOSED STEEL AND WELD SURFACES WITH TWO COATS OF SHERWIN WILLIAMS, PART #143-0255 ZINC CLAD COATING, CONTAINING 97% ZINC DUST TO RESTORE THE GALVANIZED PROTECTION.



PLAN VIEW @ BASE PLATE  
 STEP BOLTS, SAFETY CLIMB, PORTS, AND REINFORCEMENT NOT DRAWN FOR CLARITY



DO NOT GRIND WELDS FROM MORE THAN ONE GUSSET BEFORE REPLACING WELD.

CROWN CASTLE BU # 876364	
DRAWN BY: S. HARRIS	DATE 10-9-07
CHKD BY:	DATE
ENGR:	DATE

# CROWN CASTLE

2007 MODIFICATIONS  
 TOWER REWORK FOR A  
 125' EEI MONOPOLE TOWER  
 SITE: CROMWELL, CT

SHEET 2 OF 2    B    TA2007004138-12    SCALE: NONE

A	ORIGINAL RELEASE	10-9-07	SWH
REV.	DESCRIPTION	DATE	BY

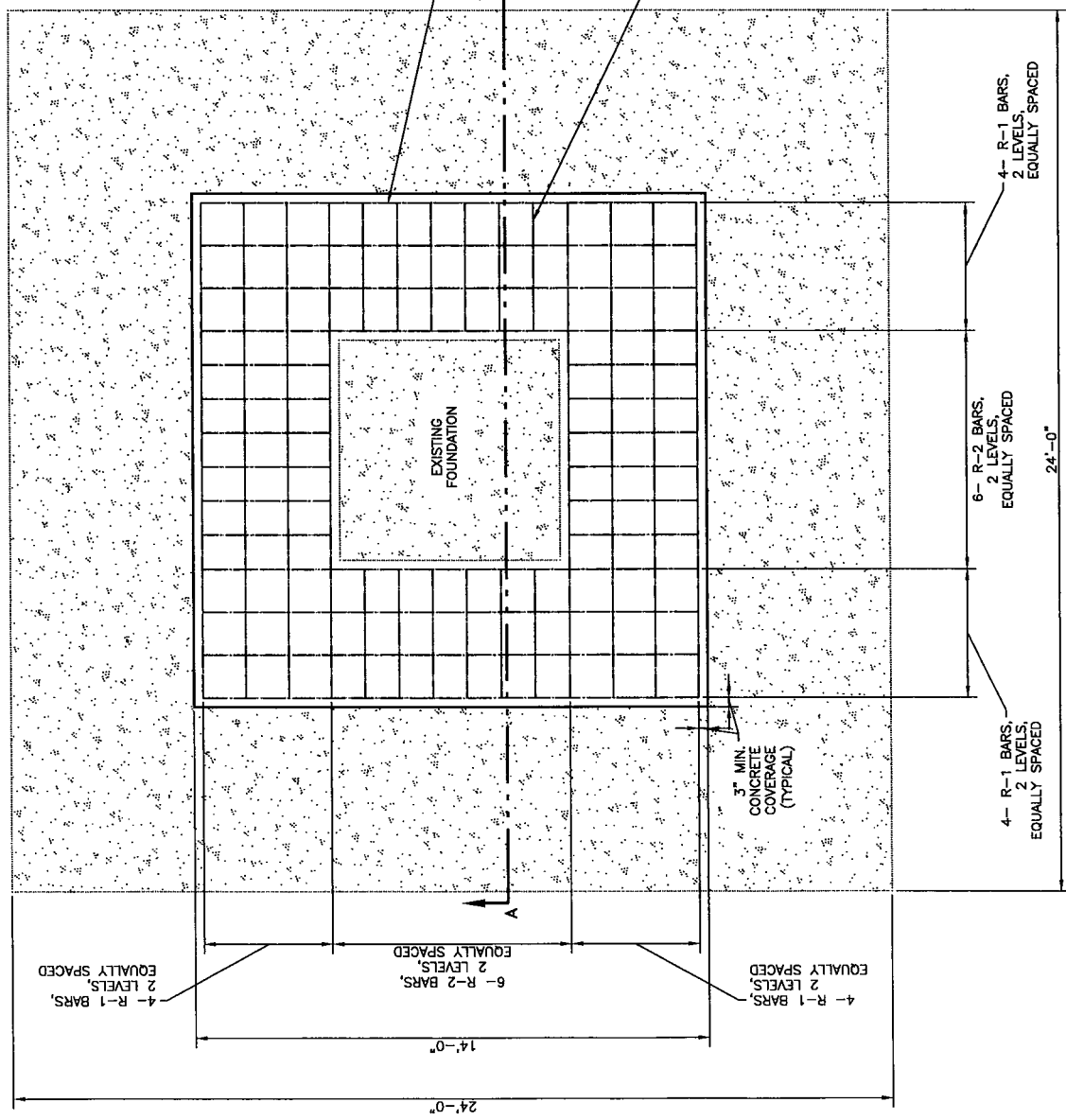
**VERTICAL STRUCTURES, INC.**  
 P.O. Box 1488  
 Richmond, CT 06478  
 Phone: (855) 624-6860  
 Fax: (855) 624-6889  
 Email: engineering@verticalstructures.com

FOR

BILL OF MATERIALS	
REF.	DESCRIPTION
-	17.78 CONCRETE (CU. YARDS)
R-1	#6 REBAR X 13'-6"
R-2	#6 REBAR X 3'-6"

**NOTES:**

1. ALL CONCRETE SHALL CONFORM TO ACI 318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE.
2. REBAR: REINFORCING BARS SHALL CONFORM TO ASTM A615 SPECIFICATIONS, GRADE 60.
3. CONCRETE TO HAVE A MINIMUM OF 6 SACKS OF CEMENT PER CUBIC YARD AND HAVE 3000 P.S.I. MINIMUM COMPRESSION AT 28 DAYS.
4. BACKFILL IS TO BE MADE IN LIFTS NOT TO EXCEED 18 INCHES. EACH LIFT IS TO BE TAMPED BY HAND OR WITH HAND HELD VIBRATORY COMPACTOR SUFFICIENTLY TO REMOVE LARGE VOIDS AND REDUCE SETTLEMENT. EXCAVATED AREA TO HAVE MINIMUM OF 6 INCH MOUND ABOVE NATURAL GROUND SURFACE WHEN COMPLETED. NO FROZEN MATERIALS, LARGE ROCKS OR ORGANIC MATERIAL IS TO BE USED FOR BACKFILL. EXISTING FOUNDATION SHOULD BE CLEANED OF GREASE, DIRT, & LOOSE DEBRIS PRIOR TO PLACING THE NEW CONCRETE.



**PLAN VIEW**

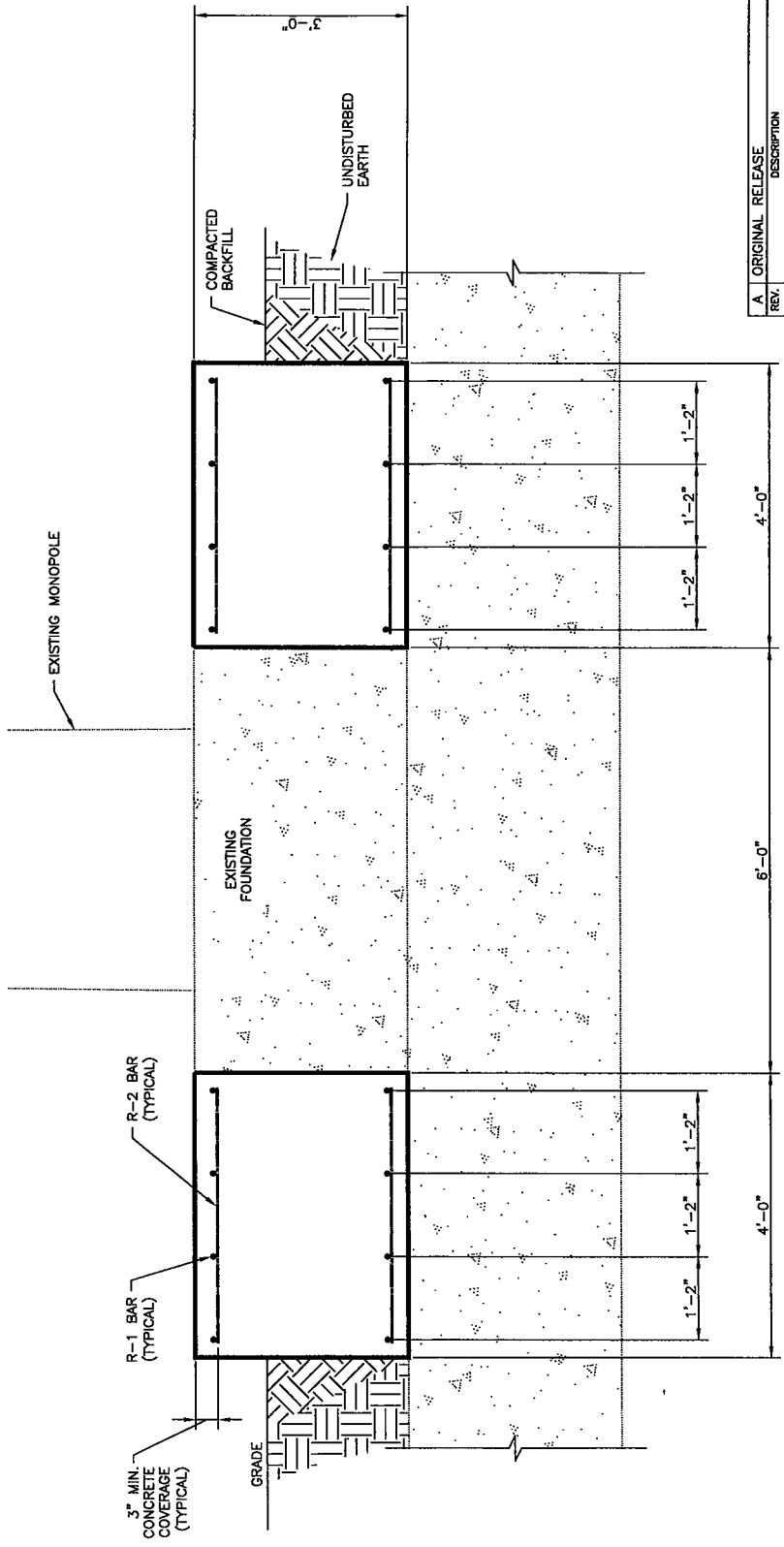
CROWN CASTLE BU # 876364	
DRAWN BY: S. HARRIS	DATE 10-9-07
CHECK'D BY:	DATE
ENGR:	DATE

<b>CROWN CASTLE</b>	
2007 TOWER MODIFICATIONS FOUNDATION REWORK FOR A 125' EEI MONOPOLE TOWER SITE: CROMWELL, CT	
SHEET 1 OF 2	B TF2007004138-T1
SCALE: NONE	

A	ORIGINAL RELEASE	10-9-07	SWH
REV.	DESCRIPTION	DATE	BY

FOR

**VERTICAL STRUCTURES INC.**  
P.O. Box 1498  
Rochester, NY 40278  
Phone: (660) 624-6600  
Fax: (660) 624-6601  
Email: eng@verticalstructures.com



SECTION "A-A"

REV.	ORIGINAL RELEASE DESCRIPTION	DATE	SWH	BY
A		10-9-07		

P.O. Box 1498  
 Rossmore, NY 14076  
 Phone: (609) 294-6390  
 Fax: (609) 294-6391  
 Email: [engineering@verticalstructures.com](mailto:engineering@verticalstructures.com)



FOR  
**CROWN CASTLE**  
 2007 TOWER MODIFICATIONS  
 FOUNDATION REWORK FOR A  
 125' EEI MONOPOLE TOWER  
 SITE: CROMWELL, CT  
 SHEET 2 of 2    B TF2007004138-T2    SCALE: NONE

CROWN CASTLE BU # 876364	
DRAFTSPERSON: S. HARRIS	DATE 10-9-07
CHK'D BY:	DATE
ENGR:	DATE