STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

October 24, 2002

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
90 Maple Avenue
White Plains, NY 10601-5196

RE: **EM-AT&T-166-021001** - AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 347 East Street, Wolcott, Connecticut.
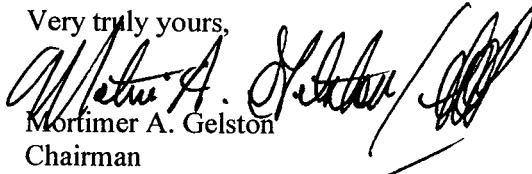
Dear Attorney Fisher:

At a public meeting held on October 23, 2002, 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 conditions that tower diagonals and the existing leg foundation be reinforced in accordance with the recommendations of Max Engineering and that a professional engineer certify to the Council that these reinforcements have been successfully completed.

The proposed modifications are to be implemented as specified here and in your notice received in our office on October 1, 2002. 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. 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,

Mortimer A. Gelston
Chairman

MAG/laf

c: Honorable Michael A. DeNegris, Mayor, Town of Wolcott
     Central Naugatuck Regional Planning Agency, Town of Wolcott
     Robert Stanford, Crown Atlantic Company
     Michele G. Briggs, Southwestern Bell Mobile Systems LLC
     Sandy M. Carter, Verizon Wireless

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NOTICE OF INTENT TO MODIFY AN
EXISTING TELECOMMUNICATIONS FACILITY AT
347 EAST STREET, WOLCOTT, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. seq. ("PUESA"), and Sections 16-50j-72(b) of the Regulations of Connecticut State Agencies adopted pursuant to the PUESA, AT&T Wireless PCS, LLC d/b/a AT&T Wireless ("AT&T Wireless") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 347 East Street, Wolcott, Connecticut (the "East Street Facility"), owned by Crown Castle ("Crown"). AT&T Wireless and Crown have agreed to share the use of the East Street Facility, as detailed below.

The East Street Facility

The East Street Facility consists of an approximately one hundred eighty (180') foot lattice tower (the "Tower") and associated equipment currently being used by SNET/Cingular and Verizon.

AT&T Wireless' Facility

As shown on the enclosed plans prepared by ScienTel, including a site plan and tower elevation of the East Street Facility, AT&T Wireless proposes shared use of the Facility by placing antennas on the Tower and equipment cabinets at grade needed to provide personal communications services ("PCS").[1] AT&T Wireless will install 6 panel antennas at approximately the 168 foot level of the Tower and associated equipment cabinets (2 proposed, 2 future, each 76"H x 30" W x 30" D) located on a concrete pad within the existing fenced compound. As evidenced in the signed sealed structural report prepared by Max Engineering, LLC, annexed hereto as Exhibit A (and previously submitted by Cingular as part of a notice of exempt modification to upgrade its antenna facilities at the East Street Facility), AT&T has confirmed that the Tower, with replacement of diagonals at 40' to 80' and 160' to 167' elevations and foundation reinforcement is structurally capable of supporting the addition of AT&T Wireless' antennas. AT&T and Crown will undertake the structural modifications as part of AT&T's facility to be constructed at the site.

AT&T Wireless' Facility Constitutes An Exempt Modification

The proposed addition of AT&T Wireless' antennas and equipment to the East Street Facility constitutes an exempt "modification" of an existing facility as defined in Connecticut General Statutes Section 16-50i(d) and Council regulations promulgated pursuant thereto. Addition of AT&T Wireless' antennas and equipment to the Tower will not result in an increase of the Tower's height nor extend the site boundaries.
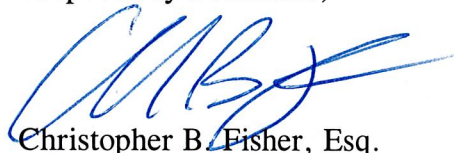
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[1] The plans show SNET/Cingular antennas at 158' (existing) and it is our understanding that they will be moved to 162' (proposed) as part of a recent filing which conditions are accounted for in the structural and MPE reports submitted with this filing.

Further, there will be no increase in noise levels by six (6) decibels or more at the Tower site's boundary. As set forth in an Emissions Report prepared by Prabhakar Rughoobur, RF Engineer, annexed hereto as Exhibit B, the total radio frequency electromagnetic radiation power density at the Tower site's boundary will not be increased to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. For all the foregoing reasons, addition of AT&T Wireless' facility to the East Street Facility constitutes an exempt modification which will not have a substantially adverse environmental effect.
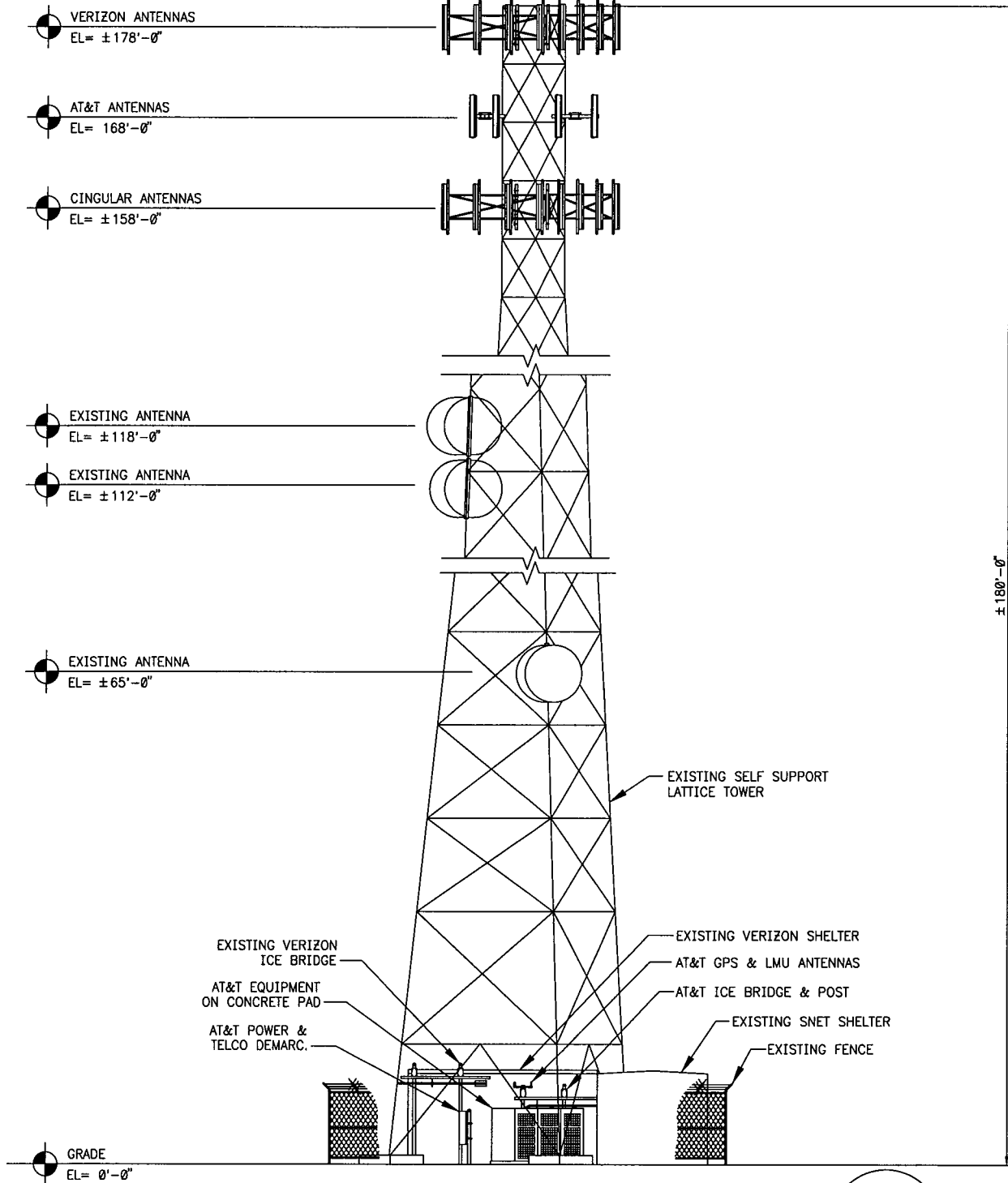
Conclusion

Accordingly, AT&T Wireless requests that the Connecticut Siting Council acknowledge that its proposed modification to the East Street Facility meets the Council's exemption criteria.

Respectfully Submitted,

Christopher B. Fisher, Esq.
On behalf of AT&T Wireless

cc: Chair of the Town Council, Town of Wolcott
        RJ Wetzel, Bechtel

VERIZON ANTENNAS
EL= ±178'-0"

AT&T ANTENNAS
EL= 168'-0"

CINGULAR ANTENNAS
EL= ±158'-0"

EXISTING ANTENNA
EL= ±118'-0"

EXISTING ANTENNA
EL= ±112'-0"

EXISTING ANTENNA
EL= ±65'-0"

EXISTING SELF SUPPORT
LATTICE TOWER

±180'-0"

EXISTING VERIZON
ICE BRIDGE

AT&T EQUIPMENT
ON CONCRETE PAD

AT&T POWER &
TELCO DEMARC.

EXISTING VERIZON SHELTER
AT&T GPS & LMU ANTENNAS
AT&T ICE BRIDGE & POST
EXISTING SNET SHELTER
EXISTING FENCE

GRADE
EL= 0'-0"

NORTH EAST ELEVATION
SCALE: 1/16" = 1'=0"

1
SC2

ⓈSCIENTEL.

THE BLEACHERY
143 WEST STREET
NEW MILFORD, CT. 06776
Tel: (860) 210-3020
Fax: (860) 210-2047

AT&T

AT&T WIRELESS PCS, LLC

149 EAST WATER STREET
SOUTH NORWALK, CT. 06855

DRAWING TITLE:
SITING COUNCIL
PROJECT INFORMATION:
WOLCOTT SE
CT-376
347 EAST STREET
WOLCOTT, CT. 06716

TOWER OWNER:
CROWN-CASTLE
703 HEBRON AVENUE
GLASTONBURY, CT. 06033

DRAWING NO.	
SC2	
REVISION NO. 1	DRAWN BY: JT
DATE ISSUED: 09/26/02	CHECKED BY: KW
SCALE: 1/16" = 1'-0"	APPROVED BY: SC
	SHEET NO. 2 OF 2
A/E PROJECT NO: 17188-0013	

10'-6"

NOKIA ULTRASITE CABINET | NOKIA ULTRASITE CABINET | NOKIA ULTRASITE CABINET | NOKIA POWER CABINET

6'-0"

N
E
W
S

SECTOR 0°
SECTOR 120°
SECTOR 240°

AT&T ANTENNA FRAMES WITH (6) ANTENNAS

EXISTING SNET ICE BRIDGE

EXISTING SNET SHELTER

AT&T 7' X 16' LEASE AREA

AT&T EQUIPMENT ON CONCRETE PAD

AT&T ICE BRIDGE AND POST

EXISTING LATTACE TOWER LEG SUPPORT (TYP. 3)

EXISTING EMERGENCY GENERATOR

EXISTING PROPANE TANK

2'-0"

AT&T POWER & TELCO DEMARC.

4'-0"

AT&T GPS AND LMU ANTENNAS

EXISTING VERIZON ICE BRIDGE

EXISTING VERIZON SHELTER

EXISTING POWER & TELCO DEMARC.

SITE PLAN
SCALE: 1" = 15'-0"

1
SC1

DRAWING TITLE: SITING COUNCIL		
PROJECT INFORMATION: WOLCOTT SE CT-376 347 EAST STREET WOLCOTT, CT. 06716	DRAWING NO. **SC1**	
	REVISION NO. 1	DRAWN BY: JT
TOWER OWNER: CROWN-CASTLE 703 HEBRON AVENUE GLASTONBURY, CT. 06033	DATE ISSUED: 09/26/02	CHECKED BY: KW
	SCALE: 1" = 15'-0"	APPROVED BY: SC
		SHEET NO. 1 OF 2
	A/E PROJECT NO: 17188-0013	

Tower Analysis Report

Crown Castle Site Name: Wolcott

Location: New Haven County, CT

Report Prepared for Crown Castle International

Crown BU Number: 806362

Customer Name: Cingular Wireless

Structure Type: 180' Self-supporting Tower

Report Date: 06-07-2002

MAX ENGINEERING LLC
9000 Southwest Freeway, Suite 410
Houston, Texas 77074-1522

E-mail: hak@maxengr.com
Phone: (713) 776-0629
Fax: (713) 776-9599

To: Lincoln Erhard
        Crown Castle International
        500 W. Cummings Park, Suite 6500
        Woburn, MA 01801

Subject: 180' Rohn Self Supporting Tower at Wolcott site, 347 East Street, Wolcott, CT
(BU#806362)

Dear Mr. Erhard,

Max Engineering has performed a structural analysis on the above referenced tower
(Crown BU#806362) for Cingular's proposed nine antennas "change-out" with nine
1+5/8" coaxial cables at elevation 162'. The tower is analyzed in accordance with
TIA/EIA-222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting
Structures for 85 mph basic design wind (½" ice case does not govern).

Our analysis report (dated 6-07-2002) indicates that provided that the following actions
are done, the existing tower foundation and the tower upper-structure will be structurally
adequate.

1.   Replace existing main diagonals at elevations 40' to 80' by (nominal) 3"
        standard pipe. Replace diagonals between elevations 160' to 167' by
        (nominal) 1.5" XS or 2" standard pipe Use new 5/8" diameter (or larger)
        A325 bolts for deg-to diagonal connections. Do not re-use existing bolts.

2.   Reinforce each existing leg foundation by additional concrete dowelled into
        the existing pier. (To increase dead weights against potential uplift). See
        Attachment A4 of the report for further details.

We appreciate this opportunity to provide you with our services. If you have any
questions or comments, please do not hesitate to call me.

Sincerely Yours,

Hak-Fong Ma, Ph.D., PE
(President, Max Engineering LLC)
Date: 06-07-2002
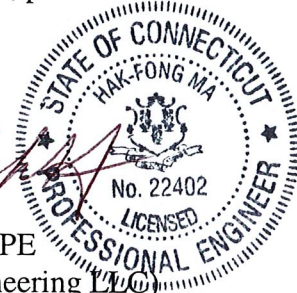
TABLE OF CONTENTS

Section 1   Introduction

The purpose of this report is to investigate the structural adequacy of an existing 180'
self-supporting tower at Wolcott, CT site (BU#806362, address: 347 East Street,
Wolcott, CT), to support Cingular Wireless's (9) proposed antennas change-out at
elevation 162', in addition to the existing or previously proposed (AT&T) antennas.
The computer inputs and outputs for the critical load cases are listed in Section 8.

The manufacturer of the existing 180' self-supporting tower is Rohn. Information on
this tower was obtained from the drawings of Rohn provided by Crown Castle, and
this was used as design input.

The new proposed antennas and the existing ones are listed in the "Tower Loading
Information" section (Section 3). The main forces considered in the analysis of the
tower are those resulting from wind. Per EIA/TIA-222-F, the basic wind speed in
New Haven County, NH is 85 mph. The results are summarized in Section 5.

The finite element program used in this analysis is licensed from and developed by
Guymast Inc./Weisman Consultants Inc. located in Downsview, Ontario, Canada. It is
a specialized computer program developed to facilitate speedy modeling and analysis.

Section 2   Analysis Criteria

- **Wind and ice conditions:** 85 mph wind with 0" ice case and 73.6 mph wind simultaneously with ½" ice case.

- **Source codes governing the analysis:** ANSI/TIA/EIA-222-F-1996

Section 3   Tower Loading Information

A)   Original Tower Design Loadings (Criteria: EIA Rev unknown)

Rad Center Elevation	Antenna Description and Count	Feedline Size, Count, and Location	Mount Type	Note
180'	(4) PD10017 antennas	Not Clearly stated	(3) Side arms	
170'	(3) PD1132D antennas	Not Clearly stated	(3) Side arms	
160'	(2) 6' diameter Std dishes	Not Clearly stated	On tower legs	

B)   Existing or Previously Proposed Tower Loadings

Level	Antenna Description, and Count, (Azimuth)	Feedline Size Count & Location	Mount Type	Carrier	Note(s)
178'	(12) Allgon 7130.16.05 antennas (27,147,267); (52"x11.4")	(12) 1+5/8"	(3) T-arms	BAM	
158'	(12) DB846H80 antenna (23,143,263) (72"x6.6"x8.25")	(12) 1+5/8"	(3) T-arms	SNET	1
118'	(1) Andrew 8' diameter HP dish; (200)	(1) EW52	On tower leg C	BAM	
112'	(1) Andrew 8' diameter HP dish , (200)	(1) EW52	On tower leg C	BAM	
65'	(1) Andrew 10' diameter HP dish; (100)	(1) EW52	On tower leg B	BAM	
168'	(6) EMS RR-90-17-02 antennas (56"x8"), (0,140,270)	(12) 1+ 5/8"	(3) T-arms	AT&T Wireless	2

Note 1: Changed out to 162' level as shown on next table.
Note 2: Previously proposed antennas

C)   Proposed & Future Loading

Level	Antenna Description, and Count, Azimuth (Note 1)	Feedline size & count	Mount Type & (Carrier)	Note
162'	(9) CCS DU04-8670 antennas (48"x14"), (24,140,261) + (6) TMAs (13"x9" each)	(9) 1+ 5/8"	(3) T-arms (Cingular, replaced SNET)	
162'	(1) Omni (9"x1")	(1) ½"	(Cingular)	2

1.   Azimuth is based on best estimate only. The impact of this estimate on results is considered minimal as wind forces in different directions are considered.
2.   Conservative to assume at 162' elevation for analysis purpose.

Section 4   Assumptions made

1. The tower is constructed in accordance with the drawings from the tower manufacturer (Rohn) and the tower has not been deteriorated.

2. Coaxial cables (feed lines) are neatly attached to the tower faces and they are considered as structural members in calculating wind forces in accordance with TIA/EIA-222-F formulas.

3. Material yield stresses assumed are stated in Section 6. The welds between the diagonals and the gusset plates are stronger than the connection bolts.

4. The original foundation design (5'x5' concrete block with rock anchors) is sufficient to support the original uplift load of 185 k. Reinforcements of the foundation will take on the forces exceeding the original design value.

Section 5   Results

The existing 185' self-supporting tower is analyzed with the existing antennas and the new proposed antennas, for the governing design wind load of 85 mph without ice per TIA/EIA-222-F criteria. (1/2" ice case with 73.6 mph) The results show that except for diagonals between elevations 40' to 100', the existing tower upper structure is structurally adequate to support the proposed antennas. However, existing foundation adequacy is established based on recommended reinforcements and calculations performed in Attachment A4.

The actual and allowable stress of the key tower members are tabulated as follows:

Tower Legs: Assumed Steel Yield Stress = 50 ksi, bolts = A325 or better

Section Elevation	A) Max Member force K	B) Allowable Force K	Stress Ratio A/B	Size
0' - 20'	246.0	337.6	0.73	8.75"OD,3/8" t
20' - 40'	229.6	264.1	0.87	6" XS
40' - 60'	197.4	264.1	0.75	6" XS
60' - 80'	164.8	212.0	0.78	6" EHS
80' - 100'	132.7	177.6	0.75	5" XS
100' - 120'	99.8	177.6	0.56	5" XS
120' - 140'	73.6	139.1	0.53	4" XS
140' - 160'	41.5	84.0	0.49	3" XS
160' - 180'	9.4	41.0	0.23	2.5" STD

Buckling of leg members govern the leg capacity. Capacity is calculated based on conservative slenderness ratio.

Yield stresses (50 ksi) of leg members are based on materials typically used by (Rohn) tower. This remains as a key assumption.

Diagonals: Assumed Steel Yield Stress = 36 ksi, bolts = A325 or better

Section Elevation	A) Member Force K	B) Allowable Force K	Stress Ratio A/B	Note
0' - 20'	18.82	25.60	0.74	Bolt governs
20' - 40'	13.00	17.27	0.75	Brace governs
40' - 60'	12.49	11.93	1.05	Brace governs
60' - 80'	11.89	11.23	1.06	Brace governs
80' - 100'	11.58	12.66	0.91	Brace governs
100' - 120'	11.67	14.39	0.81	Brace governs
120' - 140'	8.73	11.54	0.76	Brace governs
140' - 160'	8.88	13.27	0.67	Brace governs
160' - 167'	7.45	7.21	1.03	Brace governs
167'-180'	4.04	7.21	0.56	Brace governs

Horizontals: Assumed Steel Materials = A36; Bolt Materials = A325

Section Elevation	A) Connection Force K	B) Allowable Force K	Stress Ratio A/B	Note
20'	10.78	24.7	0.44	Bolt governs
30',40'	10.22	14.8	0.69	Member governs
50', 60'	9.50	17.0	0.56	Bolt governs
70', 80'	8.52	17.0	0.50	Bolt governs
90', 100'	7.75	13.6	0.57	Member governs
110', 120'	8.31	17.0	0.49	Bolt governs
120'-140'	5.89	17.0	0.35	Bolt governs
140'- 160'	5.43	14.3	0.38	Member governs
160'-180'	5.05	16.7	0.30	Member governs

Forces at the internal braces, sub-diagonals and sub-horizontals are small and are acceptable.

Comparison of Foundation Forces

Item	a) Calculated Force k (ft-k)	b) Original Design Force k (ft-k)	Comparison Ratio (a/b)	Note
Max. Leg Uplift	235.1 k	185 k	1.27	
Max. Leg Compression	274.3 k	225 k	1.22	

Uplift is the controlling force for the foundation design. See Section 8, Attachment A4 for reinforcements suggested to assure adequacy.

Section 6   Conclusions

The existing 180' self-supporting tower was analyzed with existing antennas and new proposed antennas, for a basic wind speed of 85 mph per TIA/EIA-222-F criteria. The analysis shows that the existing tower is structurally inadequate to support the Cingular change-out and previous AT&T Wireless's proposed antennas at elevation 168'unless the following actions are done.

Diagonals between elevations 40' to 80' are to be replaced by (nominal) 3" standard pipe, whereas diagonals between elevations 160' to 167' are to be replaced by (nominal) 1.5" XS (or nominal 2" standard) pipe.

The existing foundation adequacy is assured based on the assumption that the original foundation design is capable to resist the original design load (185 k uplift). The additional reinforcements recommended are demonstrated to be sufficient to resist any additional loads beyond the original designed value (see Attachment A4 calculations).

Section 7   P.E. Signature and Seal
(Site: Wilcott, BU# 806362)

This report is prepared by or under the supervision of:
Hak-Fong Ma, PE
Registered & Licensed Professional Engineer
License Number: 22402

Section 8 Attachments

A1. Crown Tower Elevation Sketch

A2. Application Engineering Data Sheets

A3. Analysis Outputs

A4. Foundation Check

3. THE EXPO
PRIOR TO

57 AGL OVERALL TOWER HEIGHT
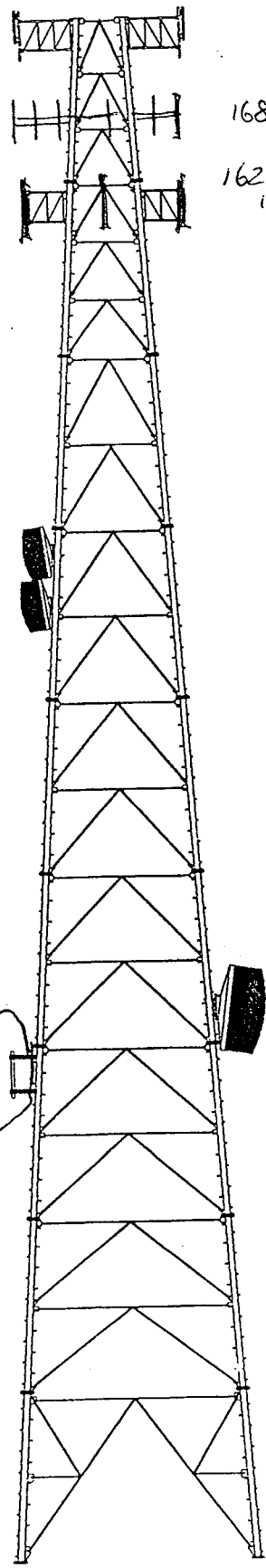
178'
178 FT AGL ANTENNA LEVEL
REF. DWG. 806362-178.dwg
BAM (12) ALP 7130.16 (EXIST)
PREVIOUSLY 27/147/267°

168' AT&T ∧ PROPOSED ANTENNAS

162'
162' 68 FT AGL ANTENNA LEVEL
REF. DWG. 806362-70.dwg
SNET (9) C.S.S. DU 04-86/0 + (6) AMPLIFIER
(13"x9")
(CINGULAR) ↑ 24/140/261°
"CHANGE OUT"

118'
118 FT AGL ANTENNA LEVEL
REF. DWG. 806362-118.dwg
BAM 8' φ HP
AZ≈ (200°)

112 FT AGL ANTENNA LEVEL
REF. DWG. 806362-112.dwg
BAM 8' φ HP
AZ≈ (200°)
112'

NOTE: TOWER LOADING INFORMATION UNAVAILABLE
DUE TO INSUFFICIENT DATA.

65'
65 FT AGL ANTENNA LEVEL
REF. DWG. 806362-65.dwg
BAM 10' φ HP
AZ≈ (100°)

57 FT AGL ANTENNA LEVEL
REF. DWG. 806362-57.dwg
DELETE
(NOT INCLUDED IN ANALYSIS)

DELETE

BUSINESS UNIT: 806362   TOWER ID: A

806362

CROWN CASTLE USA
Engineering Application
Version 5

JDE	Application No.		Application Date	
Customer No.	JDE Job No.	**0** Revision	**5/1/02** Revision Date	**806362** BU Number

PLEASE RETURN APPLICATION TO: Tara Rand
Crown Castle Atlantic
500 West Cummings Park
Suite 3400
Woburn, MA 01801
ATTN: Sales & Marketing

E-Mail
Tara.Rand@CrownCastle.com
Phone 781 729-4001
Fax 781 729-3511

Make Fee(s) Payable to Crown Communications, Inc.
Application Fee: $1500 Unless specified in an MLA

Date of Application	April 25, 2002
Desired Install Date	TBD
Reason for Application	Antenna Swap

CUSTOMER / COMPANY INFORMATION

Company Cingular Wireless
Address 500 Enterprise Drive ,3rd Floor
City Rocky Hill
State CT   Post Code 06067-3900
Primary Contact Elaine Federico(Wireless Facilities, Inc)
Phone 508-330-0285   E-Mail elaine.federico@wfinet.com
RF Contact   Aaron Brodbar
Phone 860-513-7860   E-Mail Aaron.D.Brodbar@cingular.com
Const. Contact Tom Fenton
Phone 860-513-7601   E-Mail Thomas.F.Fenton@cingular.com

SITE INFORMATION

Customer Site Name   Wolcott
Customer Site Number 1060
Crown Castle Name   NHV 108 943133
Crown Castle Number   806362
Address   347 East Street
City   Wolcott
State   CT   Post Code
County   New Haven   Site Status
Latitude   N 41 33 34.05   Longitude   W 72 56 50.72
Site Type   Self Support   Structure Height 182.6

ANTENNA INFORMATION

	Location Fig	Location Pos	Center Line Elevation	Manufacturer	Model	Type	Technology	Transmit Start	Transmit Stop	Receive Start	Receive Stop	Use	Mount Orientation	Azimuth (Mag N)	Mech Tilt
1	2	B	162	CSS	DU04-8670	Panel	TDMA Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point	140	0
2		C	162	CSS	DU04-8670	Panel	GSM Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point		
3		D	162	CSS	DU04-8670	Panel	GSM Sector	1930.0000	1935.0000	1850.0000	1855.0000	Tx/Rx	Mid-Point		
4															
5	2	F	162	CSS	DU04-8670	Panel	TDMA Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point	261	0
6		G	162	CSS	DU04-8670	Panel	GSM Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point		
7		H	162	CSS	DU04-8670	Panel	GSM Sector	1930.0000	1935.0000	1850.0000	1855.0000	Tx/Rx	Mid-Point		
8															
9	2	J	162	CSS	DU04-8670	Panel	TDMA Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point	24	0
10		K	162	CSS	DU04-8670	Panel	GSM Sector	880.0000	894.0000	835.0000	849.0000	Tx/Rx	Mid-Point		
11		L	162	CSS	DU04-8670	Panel	GSM Sector	1930.0000	1935.0000	1850.0000	1855.0000	Tx/Rx	Mid-Point		
12				Kathrein	738449	Omni	TDMA Omni			870.0000	960.0000	Rx	Upright		
13							GSM Omni			1710.0000	1880.0000	Rx			
14															
15															
16															
17															
18															
19															
20															

* All frequencies must be specific and actual operating frequencies. Crown Castle must be notified if they are modified.

ANTENNA LOCATION DIAGRAMS

46767
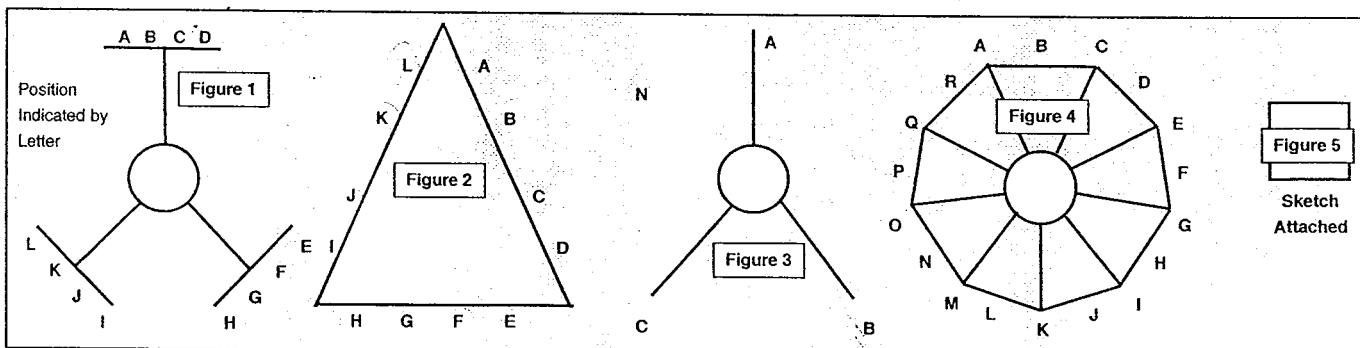
ANTENNA, FEEDLINE AND COMPONENT INFORMATION

	Antenna Parameters				Feedline Information						Lightning Suppressor Type	Tower Mounted Amplifier			
	Height	Width	Depth	Weight	Qty	Manufacturer	Model / OD	Conn. Type	Color Code	Length		Qty	Type	Elev. 1	Elev. 2
1	48	14	9	20.3	1	Andrews	LDF6-50A	Alpha	Red			2	A	162	
2	48	14	9	20.3	1	Andrews	LDF6-50A	Alpha	Red						
3	48	14	9	20.3	1	Andrews	LDF6-50A	Alpha	Red						
4	48	14	9	20.3	1	Andrews	LDF6-50A	Beta	Yellow	8 ft.		2	A	162	
5	48	14	9	20.3	1	Andrews	LDF6-50A	Beta	Yellow						
6	48	14	9	20.3	1	Andrews	LDF6-50A	Beta	Yellow						
7	48	14	9	20.3	1	Andrews	LDF6-50A	Gamma	Orange			2	A	162	
8	48	14	9	20.3	1	Andrews	LDF6-50A	Gamma	Orange						
9	48	14	9	20.3	1	Andrews	LDF6-50A	Gamma	Orange						
10	9		1	1	1	I/2" Cable									
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															

BASE STATION EQUIPMENT

Manufacturer _____ _____
Model Number _____ _____
Output (Watts) _____ _____
Connector Type _____ _____

LIGHTNING SUPPRESSOR

| | Type | A | B |
Manufacturer _____ _____
Model Number _____ _____

MOUNTING SYSTEM(s)

Figure _____
Manufacturer _____ _____
Model Number _____ _____

TRANSMITTER INTERMOD PROTECTION

Bandpass Manufacturer _____ _____
Bandpass Filter Model _____ _____
Bandpass Filter Range _____ _____
Duplexor Manufacturer _____ _____
Duplexor Model _____ _____
Duplexor Tx/Rx Isolation _____ _____

TOWER MOUNTED AMPLIFIER

| | Type | A | B |
Manufacturer | | ADC | |
Model Number | | ADC 850/1900 | |
Gain (dB) | | 12 | |
Dimensions | | 13.05"x9.17"x5.98" | |
Weight | | 25-27 | |

LAND / BUILDING / POWER

Building / Shelter Size 12' x 16' 4"
Building / Shelter Type _____
Power Required VAC: _____ Amps
Metered Power Generator Need _____
Building / Shelter Floor Space Requested
Pad Size _____ Leased Size _____

SUPPLEMENTAL COMMENTS / ADDITIONAL INFORMATION

Existing Equipment:(9) ALP 110-11-N Weight:24.5 lbs/ 52"H-8.3"W-11.4"D Frequency Range: 806-896 MHz

Will use existing Coax: Andrews 1 1/4"

Proposed Antennas are Duel Band (TDMA & GSM, GSM)

Additional LMU Omni-directional Antenna - Frequency Range: 870-960-MHz/ 1710-1880 MHz (W-250g)Height: 216 mm/ Diameter: 20 mm

This antenna needs to be at least 15' below our platform- Depending on available space on the tower, must clear tree line.

Amplifier is two per face, total number 6 amplifiers.

1/2" Coax for LMU Antenna- Length and Height TBD by Location Available.

(1) ADC Diplexer(8lbs)mounted to the 3rd (center antenna)=Total 3 Diplexers

---

I CERTIFY THE INFORMATION ABOVE IS COMPLETE AND ACCURATE _____ mon/day/year

Applicant Name   Date

☐ RF Matrix Separation Waiver Attached (Crown Castle)
☐ Structural PE Stamp Required (Crown Castle)
☐ Authorization to Proceed with Structural Analysis
☐ Structural Analysis Package Attached
☐ Equipment Specifications (Cut Sheet) Attached
☐ Equipment Specifications Previously Supplied
☐ Hard Copy To Be Forwarded By mon/day/year

Crown Castle Regional Approval

Asset Engineer _____ mon/day/year

Asset Manager _____ mon/day/year
                                        Name   Date

This application is subject to engineering approval and may also be subject to local zoning or construction approval, that may also require landlord consent.

==
MAST - Latticed Tower Analysis (Unguyed)   (c)1997 Guymast Inc. 416-736-7453
Processed under license at:

Max Engineering LLC   on: 5 jun 2002 at: 19:01:22 *ATTACHMENT A 3*
==

    Wolcott-180'SST. Analysis FOR Crown, CT-BU#806362, 85 mph basic

MAST GEOMETRY (ft)
====================

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.W..AT BOTTOM	F.W..AT TOP	TYPICAL PANEL HEIGHT
a	3	160.00	180.00	8.50	8.50	6.67
a	3	120.00	160.00	12.71	8.50	6.67
a	3	20.00	120.00	25.17	12.71	10.00
a	3	0.00	20.00	27.67	25.17	20.00

MEMBER PROPERTIES
=================

MEMBER TYPE	BOTTOM ELEV ft	TOP ELEV ft	X-SECTN AREA in.sq	RADIUS OF GYRAT in	ELASTIC MODULUS ksi	THERMAL EXPANSN /deg
LE	160.00	180.00	1.704	0.000	29000.	0.0000000
LE	140.00	160.00	3.016	0.000	29000.	0.0000000
LE	120.00	140.00	4.407	0.000	29000.	0.0000000
LE	80.00	120.00	6.112	0.000	29000.	0.0000000
LE	60.00	80.00	5.581	0.000	29000.	0.0000000
LE	20.00	60.00	8.405	0.000	29000.	0.0000000
LE	0.00	20.00	12.763	0.000	29000.	0.0000000
DI	160.00	180.00	0.799	0.000	29000.	0.0000000
DI	120.00	160.00	1.075	0.000	29000.	0.0000000
DI	60.00	120.00	1.704	0.000	29000.	0.0000000
DI	40.00	60.00	2.254	0.000	29000.	0.0000000
DI	0.00	40.00	2.228	0.000	29000.	0.0000000
HO	140.00	180.00	0.799	0.000	29000.	0.0000000
HO	80.00	140.00	1.075	0.000	29000.	0.0000000
HO	20.00	80.00	1.704	0.000	29000.	0.0000000
HO	0.00	20.00	2.228	0.000	29000.	0.0000000
BR	100.00	180.00	0.484	0.000	29000.	0.0000000
BR	80.00	100.00	0.902	0.000	29000.	0.0000000
BR	60.00	80.00	1.090	0.000	29000.	0.0000000
BR	20.00	60.00	1.687	0.000	29000.	0.0000000
BR	0.00	20.00	2.228	0.000	29000.	0.0000000

==

LOADING CONDITION A ==

Tower 85 mph wind at azimuth 0 deg., 0" ice

MAST LOADING
============

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	FORCES HORIZ kip	DOWN kip	MOMENTS VERTICAL ft-kip	TORSNAL ft-kip
C	178.0	0.00	314.7	0.0	2.10	1.33	0.00	5.43
C	168.0	0.00	314.7	0.0	2.15	1.33	0.00	4.94
C	162.0	0.02	10.0	0.0	2.05	1.33	0.00	4.87
D	180.0	0.00	122.0	0.0	0.13	0.09	0.00	0.02
D	173.3	0.00	122.0	0.0	0.13	0.09	0.00	0.02
D	173.3	0.00	171.0	0.0	0.16	0.11	0.02	0.01
D	166.7	0.00	171.0	0.0	0.16	0.11	0.02	0.01
D	166.7	0.00	195.0	0.0	0.23	0.15	0.03	-0.05
D	160.0	0.00	195.0	0.0	0.23	0.15	0.03	-0.05
D	160.0	0.00	242.0	0.0	0.26	0.18	0.03	-0.16
D	153.3	0.00	242.0	0.0	0.26	0.18	0.03	-0.16
D	153.3	0.00	241.0	0.0	0.26	0.18	0.03	-0.17
D	146.7	0.00	241.0	0.0	0.26	0.18	0.03	-0.17
D	146.7	0.00	240.0	0.0	0.26	0.18	0.03	-0.17
D	140.0	0.00	240.0	0.0	0.26	0.18	0.03	-0.17

/

D	140.0	0.00	239.0	0.0	0.27	0.20	0.03	-0.18
D	133.3	0.00	239.0	0.0	0.27	0.20	0.03	-0.18
D	133.3	0.00	239.0	0.0	0.27	0.20	0.03	-0.18
D	126.7	0.00	239.0	0.0	0.27	0.20	0.03	-0.18
D	126.7	0.00	238.0	0.0	0.27	0.21	0.04	-0.19
D	120.0	0.00	238.0	0.0	0.27	0.21	0.04	-0.19
D	120.0	0.00	237.0	0.0	0.27	0.23	0.03	-0.16
D	110.0	0.00	237.0	0.0	0.27	0.23	0.03	-0.16
D	110.0	0.00	235.0	0.0	0.27	0.23	0.03	-0.13
D	100.0	0.00	235.0	0.0	0.27	0.23	0.03	-0.13
D	100.0	0.00	234.0	0.0	0.28	0.24	0.03	-0.13
D	90.0	0.00	234.0	0.0	0.28	0.24	0.03	-0.13
D	90.0	0.00	233.0	0.0	0.28	0.25	0.03	-0.13
D	80.0	0.00	233.0	0.0	0.28	0.25	0.03	-0.13
D	80.0	0.00	232.0	0.0	0.29	0.26	0.04	-0.13
D	70.0	0.00	232.0	0.0	0.29	0.26	0.04	-0.13
D	70.0	0.00	229.0	0.0	0.29	0.27	0.03	-0.11
D	60.0	0.00	229.0	0.0	0.29	0.27	0.03	-0.11
D	60.0	0.00	226.0	0.0	0.29	0.34	0.03	-0.09
D	50.0	0.00	226.0	0.0	0.29	0.34	0.03	-0.09
D	50.0	0.00	226.0	0.0	0.28	0.34	0.03	-0.09
D	40.0	0.00	226.0	0.0	0.28	0.34	0.03	-0.09
D	40.0	0.00	225.0	0.0	0.27	0.35	0.04	-0.08
D	30.0	0.00	225.0	0.0	0.27	0.35	0.04	-0.08
D	30.0	0.00	225.0	0.0	0.27	0.36	0.04	-0.09
D	20.0	0.00	225.0	0.0	0.27	0.36	0.04	-0.09
D	20.0	0.00	205.0	0.0	0.18	0.34	0.02	-0.01
D	0.0	0.00	205.0	0.0	0.18	0.34	0.02	-0.01

ANTENNA LOADING
===============

.......ANTENNA.......			ATTACHMENT		..........ANTENNA FORCES..........			
TYPE	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
STD	178.0	267.0	8.0	250.0	-0.07	0.20	0.11	0.33
STD	178.0	27.0	8.0	10.0	0.82	0.01	0.11	0.09
STD	178.0	147.0	8.0	130.0	-0.36	-0.23	0.11	-0.29
STD	168.0	270.0	8.0	250.0	0.00	0.08	0.06	0.08
STD	168.0	0.0	8.0	0.0	0.32	0.00	0.06	0.00
STD	168.0	140.0	8.0	130.0	-0.11	-0.10	0.06	-0.08
STD	162.0	263.0	8.0	250.0	-0.14	0.20	0.11	0.29
STD	162.0	23.0	8.0	10.0	0.76	0.01	0.11	0.08
STD	162.0	143.0	8.0	130.0	-0.30	-0.22	0.11	-0.28
HP	118.0	200.0	8.0	240.0	-1.43	0.12	0.45	0.41
HP	112.0	200.0	8.5	240.0	-1.41	0.12	0.45	0.41
HP	65.0	100.0	11.6	120.0	-0.69	-1.07	0.54	-2.07

SUPPRESS PRINTING
=================

	...FOR THIS LOADING..			.........MAXIMUMS..........			
LOADS INPUT	DISPL	MEMBER FORCES	FOUNDN LOADS	ALL	DISPL	MEMBER FORCES	FOUNDN LOADS
no	yes	yes	yes	no	no	no	no

===
 ===
MAST - Latticed Tower Analysis (Unguyed)   (c)1997 Guymast Inc. 416-736-7453
Processed under license at:

Max Engineering LLC   on: 5 jun 2002 at: 19:01:22
===

  Wolcott-180'SST. Analysis FOR Crown, CT-BU#806362, 85 mph basic

LOADING CONDITION A ==
Tower 85 mph wind at azimuth 0 deg., 0" ice
LOADING CONDITION B ==
Tower 85 mph wind at azimuth 30 deg.,0" ice
LOADING CONDITION C ==
Tower 85 mph wind at azimuth 60 deg.,0" ice
LOADING CONDITION D ==
Tower 85 mph wind at azimuth 90 deg.,0" ice
LOADING CONDITION E ==
Tower 85 mph wind at azimuth 120 deg.,0" ice
LOADING CONDITION F ==
Tower 85 mph wind at azimuth 150 deg.,0" ice

2

```
LOADING CONDITION  G  ======================================================
Tower 85 mph wind at azimuth 180 deg.,0" ice
LOADING CONDITION  H  ======================================================
Tower 85 mph wind at azimuth 210 deg.,0" ice
LOADING CONDITION  I  ======================================================
Tower 85 mph wind at azimuth 240 deg.,0" ice
LOADING CONDITION  J  ======================================================
Tower 85 mph wind at azimuth 270 deg.,0" ice
LOADING CONDITION  K  ======================================================
Tower 85 mph wind at azimuth 300 deg.,0" ice
LOADING CONDITION  L  ======================================================
Tower 85 mph wind at azimuth 330 deg.,0" ice
LOADING CONDITION  M  ======================================================
Tower 73.6 mph wind at azimuth 0 deg., 0.5" ice
LOADING CONDITION  N  ======================================================
Tower 73.6 mph wind at azimuth 30 deg.,0.5" ice
LOADING CONDITION  O  ======================================================
Tower 73.6 mph wind at azimuth 60 deg.,0.5" ice
LOADING CONDITION  P  ======================================================
Tower 73.6 mph wind at azimuth 90 deg.,0.5" ice
LOADING CONDITION  Q  ======================================================
Tower 73.6 mph wind at azimuth 120 deg.,0.5" ice
LOADING CONDITION  R  ======================================================
Tower 73.6 mph wind at azimuth 150 deg.,0.5" ice
LOADING CONDITION  S  ======================================================
Tower 73.6 mph wind at azimuth 180 deg.,0.5" ice
LOADING CONDITION  T  ======================================================
Tower 73.6 mph wind at azimuth 210 deg.,0.5" ice
LOADING CONDITION  U  ======================================================
Tower 73.6 mph wind at azimuth 240 deg.,0.5" ice
LOADING CONDITION  V  ======================================================
Tower 73.6 mph wind at azimuth 270 deg.,0.5" ice
LOADING CONDITION  W  ======================================================
Tower 73.6 mph wind at azimuth 300 deg.,0.5" ice
LOADING CONDITION  X  ======================================================
Tower 73.6 mph wind at azimuth 330 deg.,0.5" ice
```

```
=============================================================================
MAST - Latticed Tower Analysis (Unguyed)      (c)1997 Guymast Inc. 416-736-7453
Processed under license at:

Max Engineering LLC                          on:  5 jun 2002  at: 19:01:22
=============================================================================
```

MAXIMUM MAST DISPLACEMENTS:
===========================

ELEV ft	------DEFLECTIONS (ft)-----			--TILTS (DEG)---		TWIST DEG
	NORTH	EAST	DOWN	NORTH	EAST	
180.0	1.009 G	-0.998 D	0.016 P	0.561 G	-0.561 D	0.251 D
173.3	0.942 G	-0.931 D	0.016 P	0.561 G	-0.561 D	0.242 D
166.7	0.875 G	-0.864 D	0.015 P	0.557 G	-0.556 D	0.227 D
160.0	0.807 G	-0.796 D	0.015 P	0.545 G	-0.544 D	0.197 D
153.3	0.741 G	-0.730 D	0.014 P	0.533 G	-0.531 D	0.168 D
146.7	0.677 G	-0.666 D	0.013 P	0.514 G	-0.511 D	0.144 D
140.0	0.616 G	-0.605 D	0.013 P	0.488 G	-0.485 D	0.122 D
133.3	0.557 G	-0.547 D	0.012 P	0.467 G	-0.464 D	0.104 D
126.7	0.501 G	-0.492 D	0.012 P	0.443 G	-0.439 D	0.088 D
120.0	0.449 G	-0.439 D	0.011 P	0.416 G	-0.412 D	0.074 D
110.0	0.376 G	-0.368 D	0.010 P	0.385 G	-0.380 D	0.059 P
100.0	0.308 G	-0.301 D	0.009 P	0.351 G	-0.345 D	0.047 P
90.0	0.247 G	-0.242 D	0.008 P	0.313 G	-0.308 D	0.038 P
80.0	0.192 G	-0.188 D	0.008 P	0.274 G	-0.268 D	0.029 P
70.0	0.146 G	-0.144 D	0.006 P	0.227 G	-0.223 D	0.026 H
60.0	0.108 G	-0.106 D	0.005 P	0.180 G	-0.176 D	0.022 H
50.0	0.076 G	-0.075 D	0.004 P	0.147 G	-0.144 D	0.018 H
40.0	0.050 G	-0.050 D	0.004 P	0.114 G	-0.112 D	0.014 H
30.0	0.030 G	-0.030 D	0.003 P	0.080 G	-0.078 D	0.010 H
20.0	0.015 G	-0.015 D	0.002 P	0.045 G	-0.044 D	0.007 H
0.0	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A

MAXIMUM ANTENNA ROTATIONS:
==========================

ELEV ft	ANT AZI	ANT TYPE	--------BEAM DEFLECTIONS (DEG)-------			
			ROLL	YAW	PITCH	TOTAL
178.0	267.0	STD	0.559 G	0.248 D	0.560 D	0.586 A

178.0	27.0	STD	0.542 C	0.247 D	0.576 L	0.562 I
178.0	147.0	STD	0.558 K	0.249 D	0.568 H	0.600 E
168.0	270.0	STD	0.558 G	0.230 D	0.557 D	0.576 A
168.0	0.0	STD	0.557 D	0.230 D	-0.558 G	0.603 D
168.0	140.0	STD	-0.547 E	0.232 D	0.557 H	0.586 E
162.0	263.0	STD	0.542 G	0.206 D	0.544 D	0.561 A
162.0	23.0	STD	-0.528 I	0.205 D	0.560 L	0.544 D
162.0	143.0	STD	0.542 K	0.208 D	0.552 H	0.571 E
118.0	200.0	HP	0.391 I	0.070 D	-0.411 L	0.392 I
112.0	200.0	HP	0.374 I	0.061 P	-0.391 L	0.374 I
65.0	100.0	HP	-0.201 G	0.024 H	-0.196 D	0.201 G

MAXIMUM TENSION IN MAST MEMBERS (kip)
==

ELEV ft	LEGS	DIAG	HORIZ	BRACE
180.0	-------------------		1.16 A	0.00 I
	0.00 A	2.24 A		
173.3	-------------------		2.28 E	0.00 C
	1.60 I	4.04 E		
166.7	-------------------		4.24 E	0.00 J
	5.65 E	7.45 E		
160.0	-------------------		5.24 E	0.00 D
	14.14 E	8.88 E		
153.3	-------------------		5.35 E	0.00 U
	24.29 E	8.73 E		
146.7	-------------------		5.53 E	0.00 C
	34.24 E	8.65 E		
140.0	-------------------		5.73 E	0.00 G
	44.03 E	8.63 E		
133.3	-------------------		5.95 E	0.00 B
	53.69 E	8.67 E		
126.7	-------------------		6.18 E	0.00 Q
	63.30 E	8.73 E		
120.0	-------------------		7.06 A	0.00 A
	72.77 E	10.52 A		
110.0	-------------------		8.01 A	0.00 M
	86.39 E	11.67 G		
100.0	-------------------		7.39 A	0.00 H
	100.66 A	11.53 H		
90.0	-------------------		7.64 H	0.00 B
	114.95 A	11.58 H		
80.0	-------------------		8.02 H	0.00 F
	128.89 A	11.72 H		
70.0	-------------------		8.40 H	0.00 L
	142.58 A	11.89 H		
60.0	-------------------		9.22 I	0.00 I
	156.31 A	12.22 F		
50.0	-------------------		9.32 F	0.00 F
	170.07 A	12.49 F		
40.0	-------------------		9.73 F	0.00 G
	183.62 A	12.75 F		
30.0	-------------------		10.12 F	0.00 C
	196.94 A	13.00 F		
20.0	-------------------		10.63 F	0.00 Q
	209.53 A	18.82 F		
0.0	-------------------		0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)
===

ELEV ft	LEGS	DIAG	HORIZ	BRACE
180.0	-------------------		-1.42 D	0.00 I
	-0.80 P	-2.24 A		
173.3	-------------------		-2.09 K	0.00 F
	-3.73 O	-4.04 E		
166.7	-------------------		-4.03 K	0.00 D
	-9.44 W	-7.45 E		
160.0	-------------------		-5.05 K	0.00 J
	-19.55 K	-8.88 E		
153.3	-------------------		-5.06 E	0.00 O
	-30.62 K	-8.73 E		
146.7	-------------------		-5.23 E	0.00 I
	-41.50 K	-8.65 E		
140.0	-------------------		-5.43 E	0.00 A
	-52.27 K	-8.63 E		

4

```
133.3  ---------------------      -5.64 E      0.00 H
         -62.97 K      -8.67 E
126.7  ---------------------      -5.89 K      0.00 L
         -73.62 K      -8.73 E
120.0  ---------------------      -7.33 G      0.00 G
         -84.44 K     -10.52 A
110.0  ---------------------      -8.31 G      0.00 T
         -99.84 K     -11.67 G
100.0  ---------------------      -7.54 G      0.00 A
        -116.20 G     -11.53 H
 90.0  ---------------------      -7.75 G      0.00 H
        -132.71 G     -11.58 H
 80.0  ---------------------      -8.09 H      0.00 A
        -148.87 G     -11.72 H
 70.0  ---------------------      -8.52 D      0.00 F
        -164.80 G     -11.89 H
 60.0  ---------------------      -9.50 D      0.00 D
        -180.98 G     -12.22 F
 50.0  ---------------------      -9.42 F      0.00 X
        -197.40 G     -12.49 F
 40.0  ---------------------      -9.82 F      0.00 C
        -213.62 G     -12.75 F
 30.0  ---------------------     -10.22 F      0.00 I
        -229.62 G     -13.00 F
 20.0  ---------------------     -10.78 F      0.00 A
        -245.96 G     -18.82 F
  0.0  ---------------------       0.00 A      0.00 A
```

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)
==

```
--------------LOAD---COMPONENTS-------------      TOTAL
  NORTH         EAST          DOWN        UPLIFT      SHEAR

 35.47 G      -30.52 C      274.25 G    -235.13 A    35.47 G
```

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)
===

```
------HORIZONTAL-----    DOWN     ---------OVERTURNING--------- TORSION
NORTH   EAST   TOTAL              NORTH       EAST       TOTAL
              @  30.4                                   @  30.2

 60.0  -59.4   60.6      89.1    6158.3     -6057.3     6235.9    27.5
  G      D      H         P         G          D           H       H
```

===
ORIGINAL DATA FILE :
            e:\Structural_Design\Self_Support\Wolcott2\wolcott2.usm
===
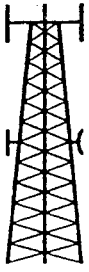
S

Client __CROWN CASTLE__   Job No. __SOP__   Date __6/6/0?__

Site Name/# __WOLCOTT, BU# 806362__   Computed By _____

Structure __FOUNDATION CHECK__   Reference _____

- BASED ON INFORMATION PROVIDED BY CROWN CASTLE, THE EXISTING TOWER LEG FOUNDATION IS SUPPORTED BY SEPARATE 5'x5' SQUARE PIER ROCK ANCHORED TO THE LEDGE. (6' BELOW GRADE)

	ORIGINAL DESIGN FORCES (PER LEG)	MAX. CALCULATED LEG FORCES (PER LEG)	RATIO $\left(\frac{NEW}{ORIGINAL}\right)$
COMPRESSION	225^k	275^k	1.22
UPLIFT	185^k	236^k	1.27
SHEAR	30^k	36^k	1.20

SINCE THE UNDERLYING GROUND (~ 6' BELOW GRADE LEVEL) IS ROCK, IT IS OBIOUS THAT BEARING PRESSURE IS NOT A PROBLEM. THE MAIN CONCERN IS UNCERTAINTY IN THE EXISTING FOUNDATION'S RESISTANCE TO UPLIFT.

- ADDITIONAL CONCRETE AS SHOWN ON PAGES 4-6 IS SUGGESTED. (DOWELS TO TIE THE

- THE PURPOSE IS TO INCREASED THE SELF-WT OF THE FOUNDATION TO RESIST ADDITIONAL UPLIFT FORCE (BEYOND THE ORIGINAL DESIGN VALUE OF 185^k.

(i.e. $236 - 185 = 51^k$; SAY DESIGN FOR 56^k ADDITIONAL UPLIFT RESISTANCE)

ADDITIONAL CONCRETE VOLUME $\simeq (12.5^2 - 5^2) \times 6 = 787.5 FT^2$

CONSERVATIVELY ASSUME GROUND WATER CLOSE TO GRADE ; UNIT WT

$\gamma' \simeq 0.09 KCF$ $(0.15 - 0.06)$

$\gamma = 0.15 KCF$ (WITHOUT WATER'S BUOYANCE EFFECTS)
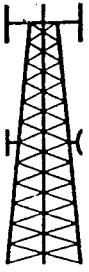
Client _CROWN CASTLE_   Job No. _508_   Date _6/6/02_

Site Name/# _WOLCOTT, BU# 806362_   Computed By _____

Structure _____   Reference _____

$\text{WT. OF NEW CONC} \approx 787.5 \times 0.09 = 70.9^k$ (PER LEG)

PER TIA/EIA-222-F, USE SAFETY FACTOR = 1.25

$\therefore$ ADDITIONAL RESISTANCE TO UPLIFT $= \dfrac{70.9}{1.25} = 56.7^k > 56^k$ (NEEDED)

O.K.

<u>CHECK DOWEL</u>   (#8, HILTI HIT C-100, 18" EMBED)
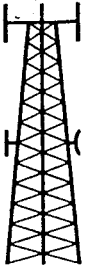
(DIAGONAL DOWELS MAKE SURE LOAD TRANSFER FAIRLY EVENLY)

MIN # OF REBARS ≈ 24

$\dfrac{70.9^k}{24} \approx 2.95^k$ (SAY 3^k) $< 0.79 \times (0.4 \times 60) \approx 19^k$ CAISC APPROACH

$t F_y$ O.K.

(ACI APPROACH) $1.4D + 1.7L$

$1.4 \times 70.9 = 99.3^k$

Not Roughened

$\phi V_n = A_{vf} f_y \mu = .85 (24 \times 0.79) \times 60 \times 0.6 \approx 580^k$

$M_u \approx 99.3^k \times 2' \approx 2383^{k-ft}$

$\phi M_n = 0.9 \ast A_s f_y d (1 - 0.59 \rho \frac{f_y}{f_c}) \approx 0.9 \times (24 \times .79) \times 60 \times 60'' \times 0.95$

$\approx 58359^{k-ft}$

$\dfrac{99.3}{580} + \dfrac{2383}{58359} = 0.17 + 0.04 \approx 0.21 < 1.0$ O.K.

HILTI

Anchoring Systems

4.3.5

HIT C-100 Injection Technique

(A4. P.3 oF 6)

INTO

HIT C-100 Ultimate Bond Strength & Steel Strength for Rebar in Concrete ≥ 2300 psi (15.9 MPa)

Nominal Rebar Size in.	Embedment Depth in. (mm)	Ult. Bond Strength lb (kN)	Embedment to Develop Yield Strength [1,2] in. (mm)	Embedment to Develop Tensile Strength [1,2] in. (mm)	Grade 60 Rebar[2]	
					Yield Strength lb (kN)	Tensile Strength lb (kN)
#3	1³/₄ (45)	3400 (15.1)	3¹/₂ (89)	5¹/₄ (133)	6600 (29.4)	9900 (44.0)
	3¹/₂ (89)	6800 (30.3)				
	5¹/₄ (133)	10200 (45.4)				
#4	2¹/₈ (54)	4300 (19.)	5 (127)	7¹/₄ (184)	12000 (53.4)	18000 (80.0)
	4¹/₄ (108)	10000 (44.5)				
	6³/₉ (162)	15700 (69.8)				
#5	2¹/₂ (64)	6000 (26.7)	6¹/₂ (165)	9³/₈ (238)	18600 (82.7)	27900 (124.1)
	5 (127)	14000 (62.3)				
	7¹/₂ (184)	22000 (97.9)				
#6	3³/₈ (86)	9000 (40.0)	8⁵/₈ (219)	13 (330)	26400 (117.4)	39600 (176.2)
	6⁵/₈ (168)	20000 (89.0)				
	10 (254)	31000 (137.9)				
#7	3³/₈ (86)	10000 (44.5)	10¹/₂ (266)	15¹/₂ (394)	36000 (160.1)	54000 (240.2)
	6⁵/₈ (168)	22000 (97.9)				
	10 (254)	34000 (151.2)				
#8	4¹/₈ (105)	17000 (75.6)	11¹/₂ (292)	17¹/₄ (438)	47400 (210.8)	71100 (316.3)
	8¹/₄ (210)	35000 (155.7)				
	12³/₈ (314)	53000 (235.8)				
#9	5 (127)	22000 (97.9)	13¹/₄ (336)	20 (508)	60000 (266.9)	90000 (400.3)
	10 (254)	45000 (200.2)				
	15 (381)	68000 (302.5)				
#10	6 (152)	30000 (133.5)	15¹/₄ (387)	23 (584)	76200 (339.0)	114300 (508.4)
	12 (305)	60000 (266.9)				
	18 (457)	90000 (400.3)				

1. Embedment depth required to attain an average ultimate bond strength which equals the nominal strength of a Grade 60 rebar.
2. Steel strength based on nominal cross-sectional area of rebar.
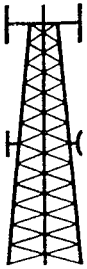
Client _CROWN CASTLE_   Job No. _508_   Date _6/7/02_

Site Name/# _WoLCoTT , Bu# 806362_   Computed By _____
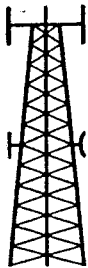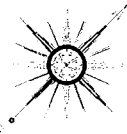
Structure _____   Reference _____

12'-6" (MIN.) LEG A & B
(NOTE 1)

12'-6" (MIN) LEG A & B
(NOTE 1)

A

A

TOP & BOTTOM LAYER
#8 (GRADE 60)
REBAR , HiLTi
HiT C-100 (OR
EQUAL) WiTH MIN
18" EMBEDMENT
TO EXiST. CONCRETE

← 3"(TYP.)

3"
(TYP.)

MIDDLE LAYERS
#8 (GRADE 60) REBAR, HiLTi
HiT C-100 (OR EQUAL), WiTH
MIN 18" EMBED TO (E) CONCRETE

PLAN VIEW
(SHOWING NEW DOWEL REBARS ONLY)
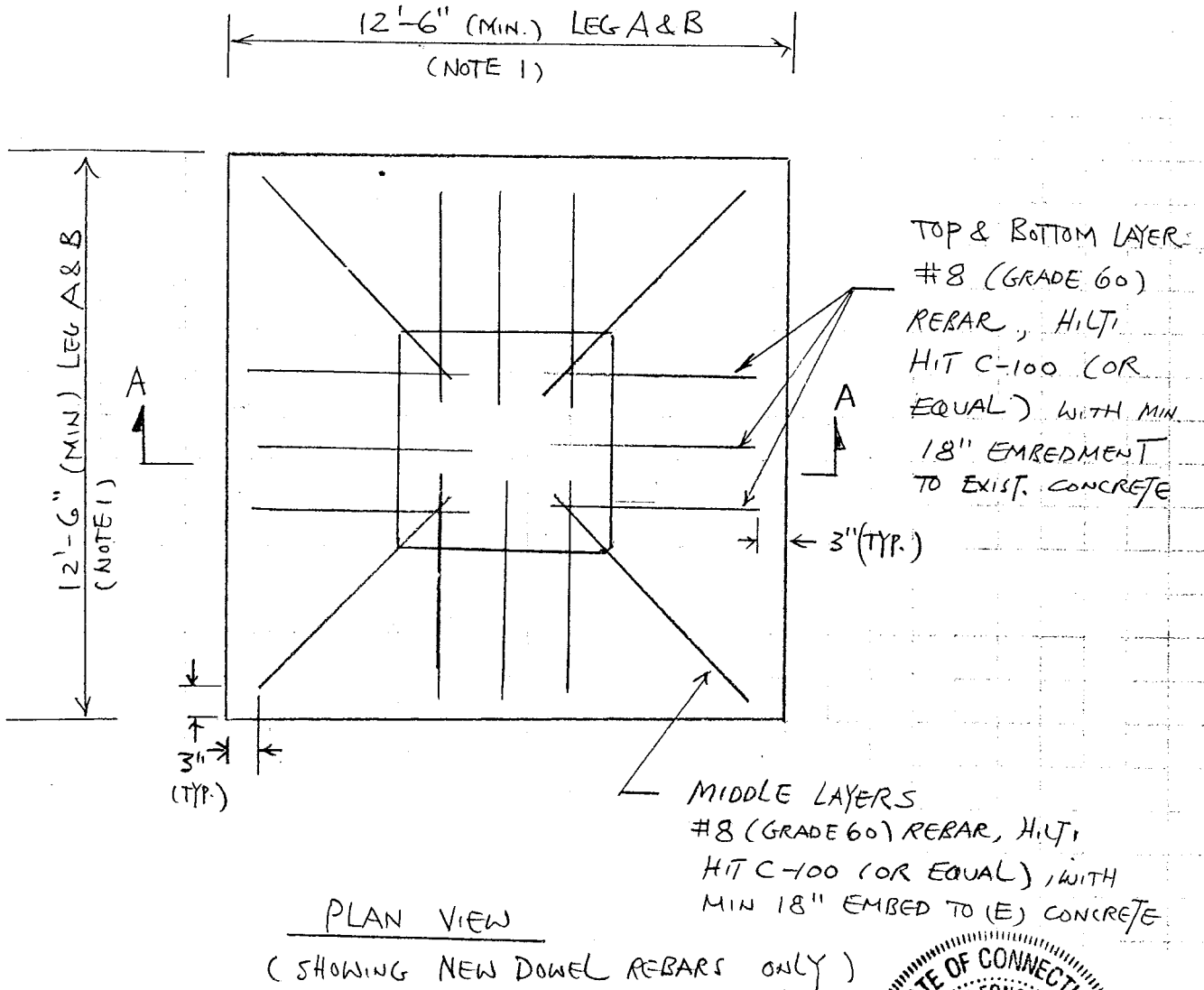
$(28 \text{ DAYs}) f_c' = 3000 \text{ psi}$

$\text{STEEL } f_y = 60 \text{ ksi}$

STATE OF CONNECTICUT
HAK-FONG MA
No. 22402
LICENSED
PROFESSIONAL ENGINEER
6/7/02
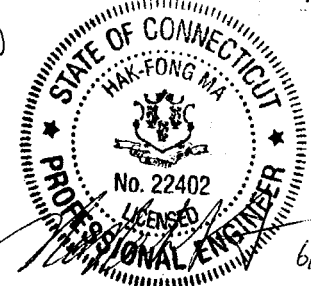
NOTE 1 : MAY FiELD ADJuST DIMENSIONS TO ACCOMMODATE SPACE RESTRiCTiONS
PROViDED CENTER OF NEW FOUNDATiON ≃ CENTER OF ORIGiNAL PIER
AND TOTAL CONCRETE VOLUME (iNCLUDiNG OLD CONCRETE) IS NOT
LESS THAN 937 FT³ EACH LEG

Client ___CROWN CASTLE_____

Site Name/# __WoLCoTT, Bu# 806362__

Structure _____

Job No. ___508___ Date __6/7/02___

Computed By _____

Reference _____

#8 EACH WAY, TOP & BOTTOM

(E) CONCRETE BLOCK

3" (TYP.)

PLAN VIEW

(SHOWING NON-DOWEL REBARS ONLY)

Client _CROWN CASTLE_   Job No. _508_   Date _6/6/02_

Site Name/# _WOLCOTT, BU# 806362_   Computed By _____

Structure _____   Reference _____

SEAL JOINT TO AVOID POTENTIAL WATER ACCUMULATION (TYP)

TOP LAYER, #8 DOWELS

NEW CONCRETE

2'(±6")

12"(±6") (NOTE 1)

(E) GRADE

MIDDLE LAYERS DOWELS #8 (ALONG DIAGONALS) SEE PLAN

EXIST. CONC. BLOCK WITH ROCK ANCHORS

2'

6' (MIN.)

(NOTE 1) 12"(±6")

"NON-DOWEL" REBARS #8@12" EACH WAY

BOTTOM LAYER, #8 DOWEL

NEW CONCRETE (6' HEIGHT, MIN.)

(E) ROCK ANCHOR
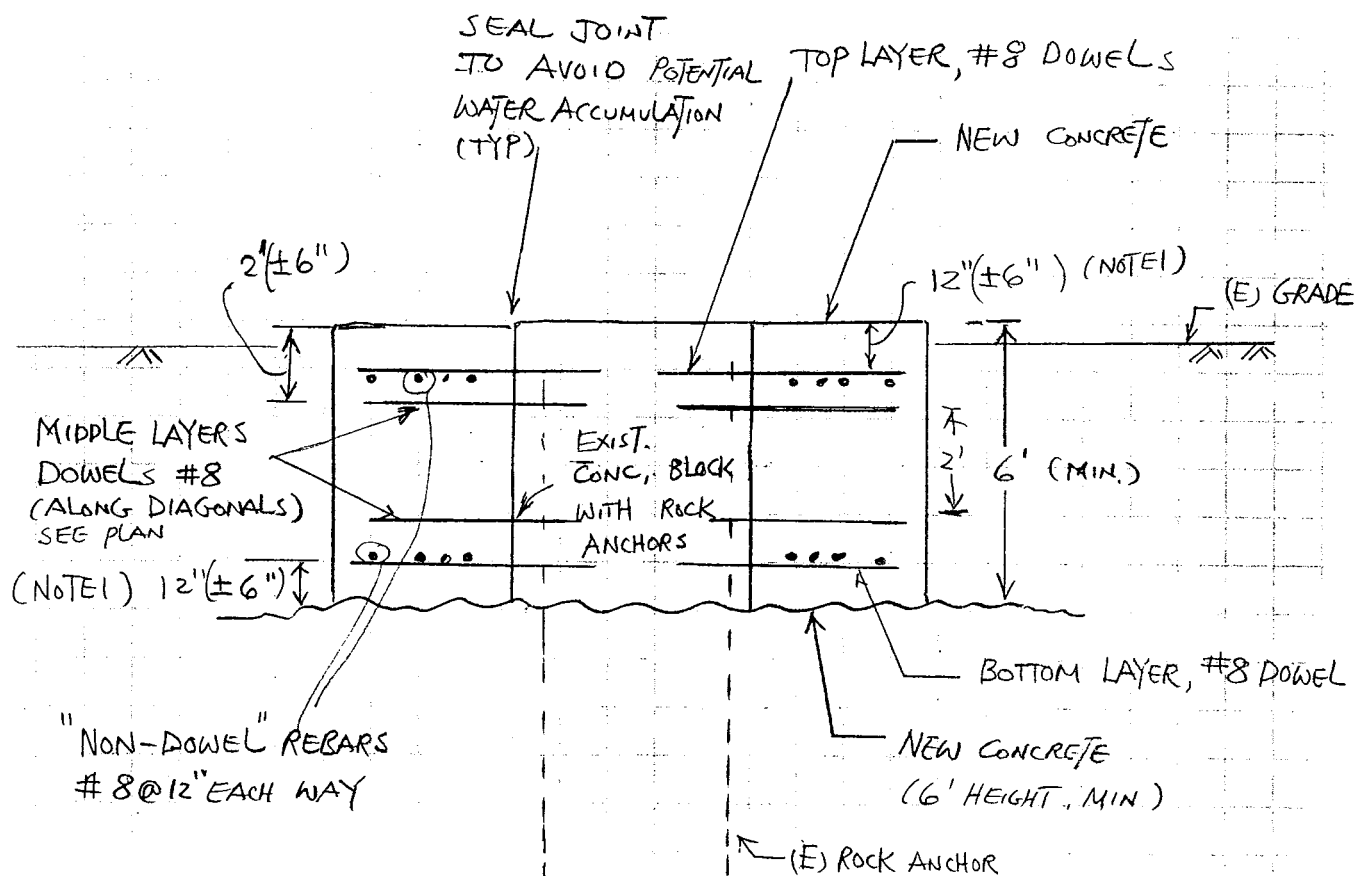
<u>ELEVATION</u>   (SECTION A-A)

NOTE 1 = AVOID INTERFERENCES WITH EXISTING CONCRETE REBARS OR/ AND BOLTS.

NOTE 2 = ROUGHEN EXISTING CONCRETE BLOCK SURFACE IN ACCORDANCE WITH ACI CODE & FULLY INSPECT DOWELS BEFORE POURING NEW CONCRETE.

STATE OF CONNECTICUT
HAK-FONG MA
No. 22402
LICENSED
PROFESSIONAL ENGINEER

6/7/02

EXIST. PIER

(3) #8 BARS @ 7" O.C. TYP. EA. SIDE, TOP & BOT.

1'

(4) #6 DOWELS @ 12" O.C. TYP. EA. SIDE, TOP & BOT.

8'-8"

4" CLR. TYP.

PLAN

8'-8"

1' MIN. EMBEDMENT

EXIST. PIER

5'

4" CLR. TYP.

ELEVATION
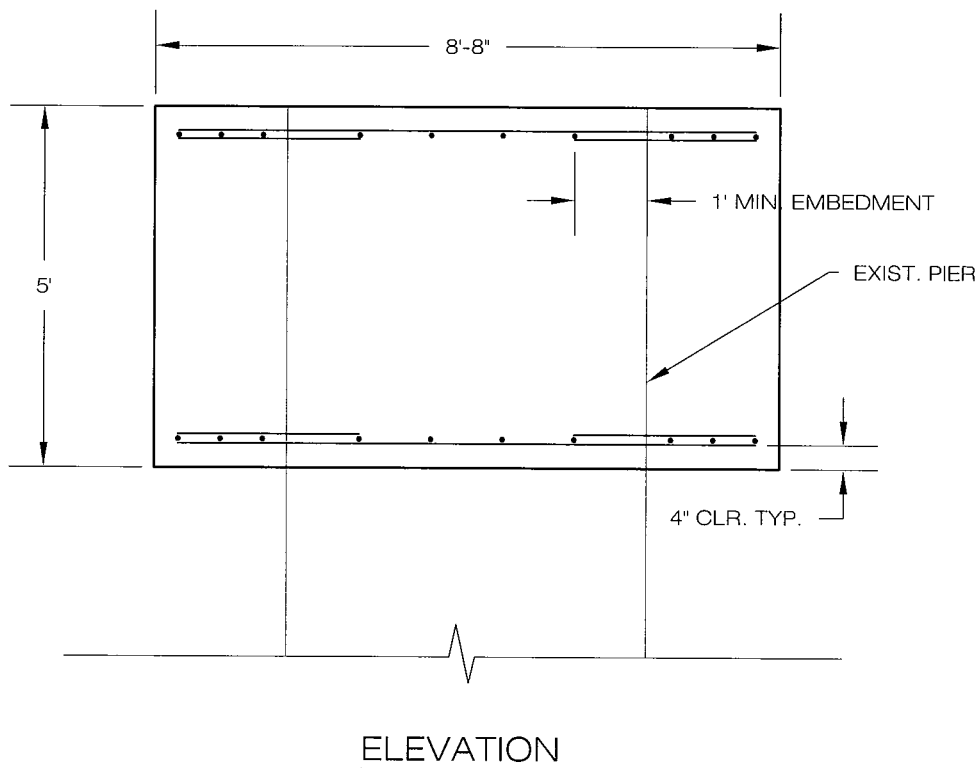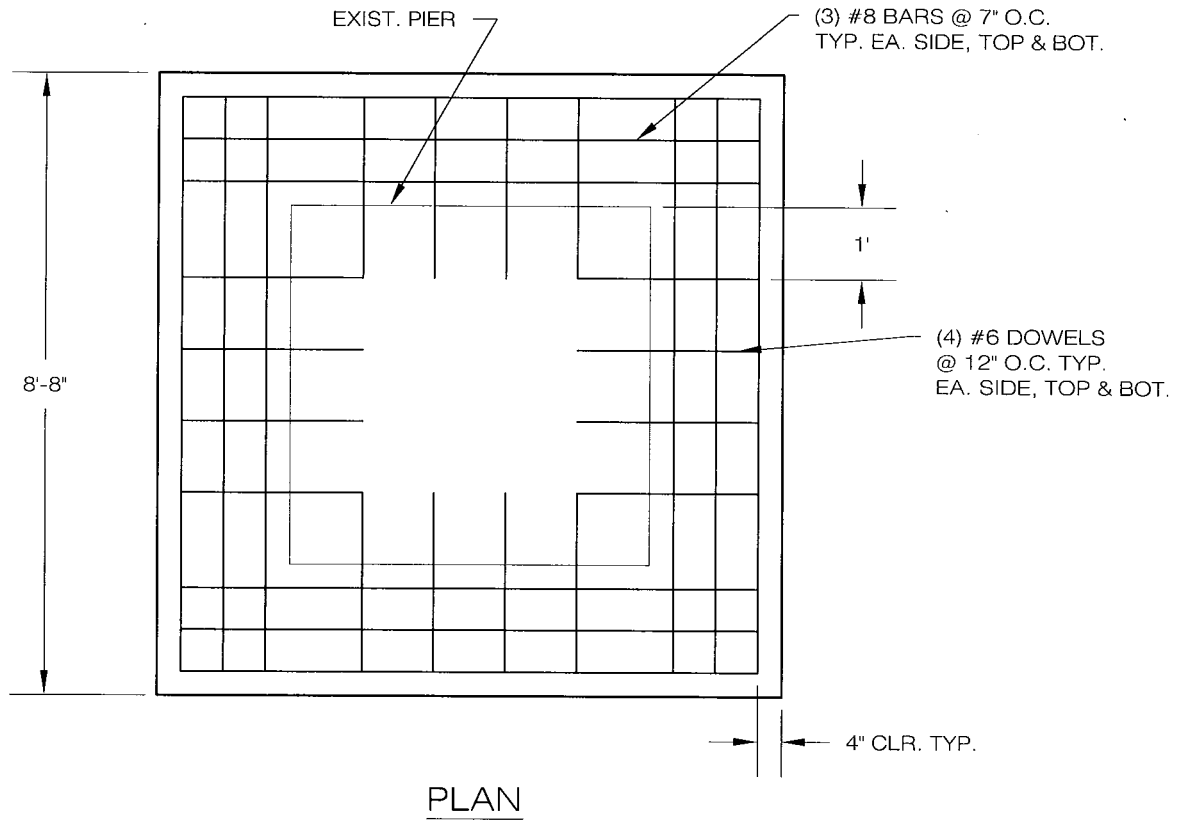
NOTES:

1. This foundation reinforcement based on reactions by Max Engineering LLC, dated June 7, 2002 as follows:
   Compression: 275 kips
   Tension: 236 kips
   Total Shear: 36 kips
2. Foundation modifications assume existing rock anchors are capable of supporting original base reactions. Design assumes groundwater table is below bottom of reinforcement blocks.
3. Reinforcing steel shall consist of ASTM A615 deformed bars.
4. Concrete shall have a compressive strength of 4000 psi at 28 days, air entrainment of 6 to 8%, and maximum slump of 5".
5. All work shall be performed in accordance with applicable local, state and federal codes and safety regulations.
6. Concrete work shall comply with ACI 318, latest revision.
7. Procedures for protection of excavations, existing structures, and utilities shall be established prior to foundation installation.
8. Reinforcing bars and cages shall be braced to retain proper dimensions during handling and placement of concrete.
9. Concrete shall be placed against undisturbed soil.
10. Dowels shall be installed using epoxy or non-shrink cementitious grout.
11. Joint between new and existing concrete shall be sealed to prevent water infiltration.

REINFORCING SCHEDULE:

Qty	Bar	Size	Length
24	Straight	#8	8'
32	Dowels	#6	2'-6"

Quantities shown are per pier.
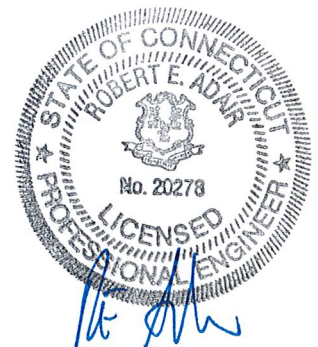
RF Exposure Analysis for Proposed AT&T Wireless Antenna Facility

SITE-ID : 913-008-376

September 26, 2002

Prepared by AT&T Wireless Services, Inc.
Prabhakar Kumar Rughoobur **RF Engineer**

AT&T Wireless Services, Inc.

Table of Contents

1. Introduction

This report constitutes an RF exposure analysis for the proposed AT&T Wireless antenna facility to be located at *347 East Street, Wolcott, CT 06716*. This analysis uses site-specific engineering data to determine the predicted levels of radio frequency (RF) electromagnetic energy in the vicinity of the proposed facility and compares those levels with the Maximum Permissible Exposure (MPE) limits established by the Federal Communications Commission.

2. Site Data

Site Name: *Wolcott SE*	
Number of simultaneously operating channels	12
Type of antenna	Allgon 7250.03
Power per channel (Watts ERP)	250.0 Watts
Height of antenna (feet AGL)	168 feet
Antenna Aperture Length	5.1 feet

3. RF Exposure Prediction

The following equations established by the FCC, in conjunction with the site data, were used to determine the levels of RF electromagnetic energy present in the vicinity of the proposed facility[1]:

$$PowerDensity = \frac{0.64 * N * EIRP(\theta)}{\pi * R^2} \ (mw/cm^2) \qquad \textbf{\textit{Eq. 1-Far-field}}$$

Where, *N*= Number of channels, *R*= distance in cm from the RC (Radiation Center) of antenna, and ***EIRP(θ)*** = The isotropic power expressed in milliwatts in the direction of prediction point.

$$PowerDensity = \frac{P_{in}/ch * N * 10^3}{2 * \pi * R * h * \alpha / 360} \ (mw/cm^2) \qquad \textbf{\textit{Eq. 2-Near-field}}$$

Where ***P_{in}/ch*** = Input power to antenna terminals in watts/ch, ***R*** = distance to center of radiation, ***h*** = aperture height in meters, α = 3 dB band-width of horizontal pattern.

---

[1] RF exposure is measured and predicted in terms of power density in units of milliwatts (mW), a thousandth of a watt, or microwatts (μ W), a millionth of a watt, per square centimeter (cm^2). Data comparing predictive analysis with on site measurements has demonstrated that power density can be effectively predicted at given locations in the vicinity of a wireless antenna facility.

4. FCC Guidelines for Evaluating the Environmental Effects of RF Radiation

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by a Second Memorandum Opinion and Order. These new rules represent a consensus of the federal agencies responsible for the protection of public health and the environment, including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Health and Safety (NIOSH), and the Occupational Safety and Health Administration (OSHA).

Under the laws that govern the delivery of wireless communications services in the United States, as amended by the Telecommunications Act of 1996, the FCC has exclusive jurisdiction over RF emissions from personal wireless antenna facilities, which include cellular, PCS, messaging and aviation sites.[2] Pursuant to its authority under federal law, the FCC has established rules to regulate the safety of emissions from these facilities.

5. Comparison with Standards

Exhibit A shows the levels of RF electromagnetic energy as one moves away from the antenna facility. As shown in Exhibit A, the maximum power density is 0.000466 mW/cm^2 which occurs at 1300 feet from the antenna facility. The chart in Exhibit A also shows that the power density is less than 0.000052 mW/cm^2 at a distance of 4 feet. Table 1 below shows the Maximum Permissible Exposure (MPE) limits established by the FCC. There are different MPE limits for public/uncontrolled and occupational/controlled environments.

Table 1: Maximum Permissible Exposure limits for RF radiation

Frequency	Public/Uncontrolled	Occupational/controlled	Maximum power density at Accessible location
Cellular	.580 mW/cm^2	2.9 mW/cm^2	0.000466 mW/cm^2
PCS	1 mW/cm^2	5.0 mW/cm^2	

The maximum power density from AT&T's proposed system at the proposed facility represents only 0.05 % of the public MPE limit for PCS frequencies. Since there are other transmitters at this site operating at different frequencies, the proper method for evaluating compliance with exposure limits is to find the percentage of MPE for each service, then sum the percentages to reach a total % of MPE for the site. (OET 65, pp 35-37)
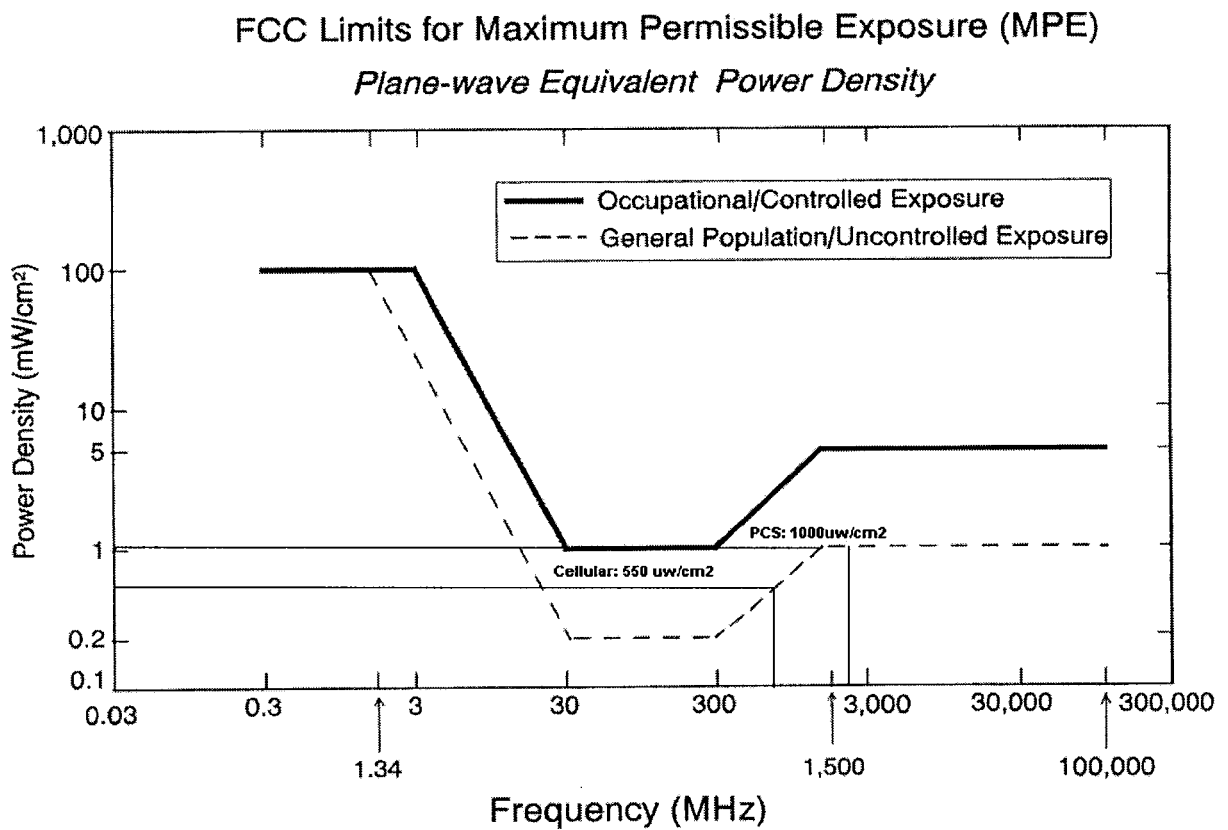
From the last filing done by Cingular Wireless at the Connecticut Siting Council for their antenna modification at this site, it is seen that the MPE from their planned operation will be 6.3 % of MPE at their frequency of operation. Adding the energy from the proposed AT&T, Verizon and Cingular systems brings the total exposure to 7.34 % of MPE for uncontrolled (general public) exposure. Exhibit B shows the cumulative MPE from AT&T's proposed and Verizon's existing systems.

---

[2] 47 U.S. C. Section 332 (c) (7)(B)(iv) states that "[n]o State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."
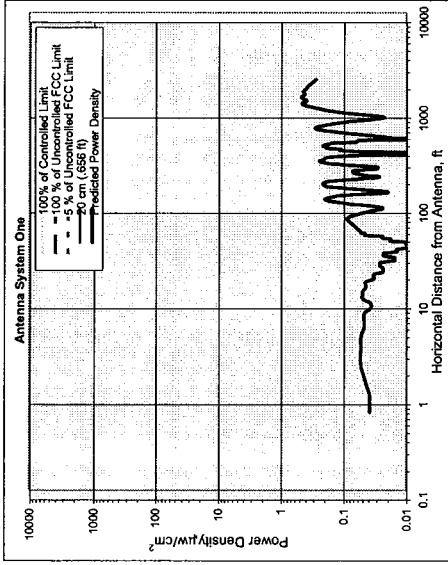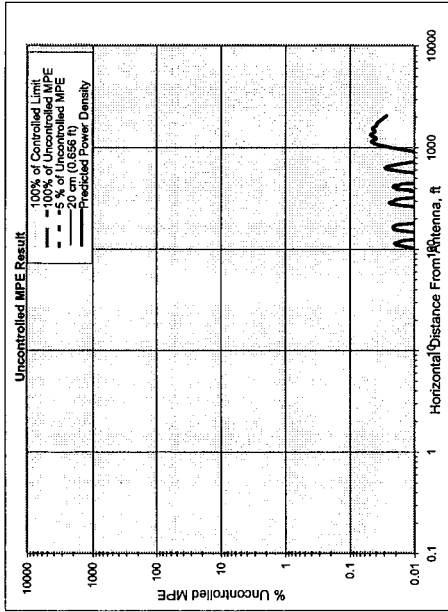
6. Conclusion

This analysis show that the maximum power density in accessible areas at this location will be 7.34 % of MPE, a level of RF energy that is well below the Maximum Permissible Exposure limit established by the FCC.

7. FCC Limits for Maximum Permissible Exposure

FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density

8. Exhibit A

Antenna System One

Legend:
- 100% of Controlled Limit
- 100% of Uncontrolled FCC Limit
- 5% of Uncontrolled FCC Limit
- 20 cm (.656 ft)
- Predicted Power Density

Y-axis: Power Density, µw/cm² (10000, 1000, 100, 10, 1, 0.1, 0.01)
X-axis: Horizontal Distance from Antenna, ft (1, 10, 100, 1000, 10000)

Uncontrolled MPE Result

Legend:
- 100% of Controlled Limit
- 100% of Uncontrolled MPE
- 5% of Uncontrolled MPE
- 20 cm (0.656 ft)
- Predicted Power Density

Y-axis: % Uncontrolled MPE (10000, 1000, 100, 10, 1, 0.1, 0.01)
X-axis: Horizontal Distance From Antenna, ft (0.1, 1, 10, 100, 1000, 10000)

Antenna System One

	units	Value
Frequency	MHz	1945.00
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	5.86
(Center of Radiator)	feet	168.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		Allgon 7250.03
Max Ant Gain	dBd	16.30
Down tilt	degrees	3.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	5.11
Ant HBW	degrees	65.00
Distance to Ant_bottom	feet	160.45
WOS?	Y/N?	n

Number of Antenna Systems: 1

Meets FCC Controlled Limits for The Antennas Systems.

Meets FCC Uncontrolled Limits for The Antenna Systems.

Meets 5% of FCC Uncontrolled Limits for The Antenna Systems.

No Further Analysis Required.

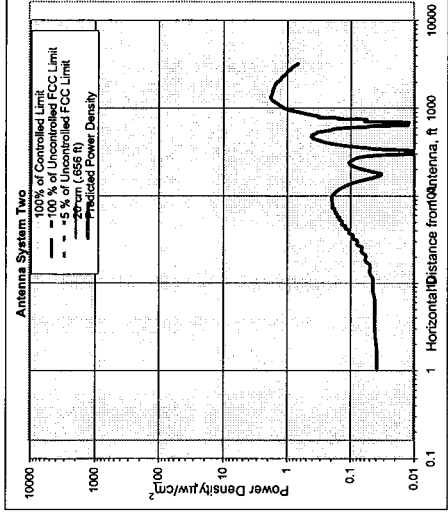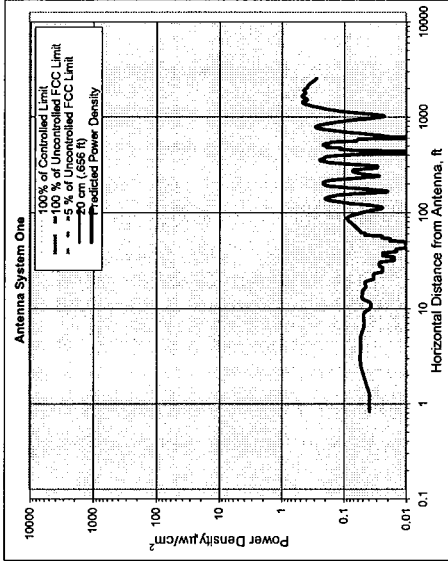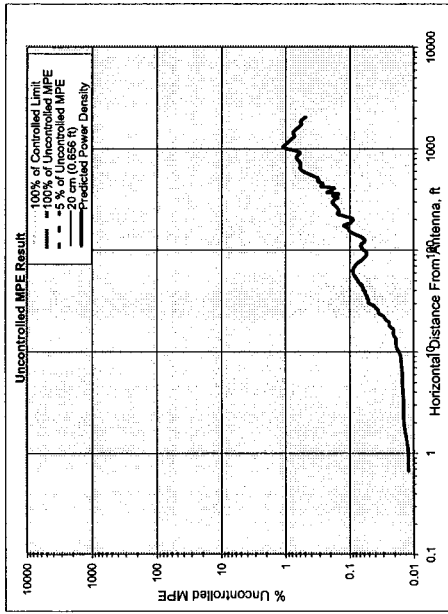|	Power Density		@Horiz. Dist.
	mW/cm²	% of limit	feet
Maximum Power Density =	0.000466	0.05	1300.00
2,146.33 times lower than the MPE limit for uncontrolled environment			
Composite Power (ERP) =	3,000.00		Watts

Site ID: 913-008-376
Site Name: Wolcott SE
Site Location: Intn of SR-322 & Meriden-Waterbury Tnpke
Wolcott, CT 06716

Performed By: Prabhakar Kumar Rughoobur

Date: 9/24/02

Ant System ONE Owner: AT&T
Sector: 3
Azimuth: 100/220/350

9. Exhibit B

Antenna System Two

Antenna System One

Uncontrolled MPE Result

Antenna System Two

	units	Value
Frequency	MHz	880.00
# of Channels	#	30
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	15.77
(Center of Radiator)	feet	178.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		Allgon 7130.16.05
Max Ant Gain	dBd	12.00
Down tilt	degrees	3.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	4.33
Ant HBW	degrees	95.00
Distance to Ant bottom	feet	170.84
WOS?	Y/N?	n

Antenna System One

	units	Value
Frequency	MHz	1945.00
# of Channels	#	12
Max ERP/Ch	Watts	250.00
Max Pwr/Ch Into Ant.	Watts	5.86
(Center of Radiator)	feet	168.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		Allgon 7250.03
Max Ant Gain	dBd	16.30
Down tilt	degrees	3.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	5.11
Ant HBW	degrees	65.00
Distance to Ant bottom	feet	160.45
WOS?	Y/N?	n

Number of Antenna Systems: 5

Meets FCC Controlled Limits for The Antennas Systems.

Meets FCC Uncontrolled Limits for The Antenna Systems.

Meets 5% of FCC Uncontrolled Limits for The Antenna Systems.

No Further Analysis Required.

	Power Density		@Horiz. Dist.
	mW/cm²	% of limit	feet
Maximum Power Density =	0.009230	1.04	1000.00
Composite Power (ERP) =	16,228,500.00		Watts

96.45 times lower than the MPE limit for uncontrolled environment

Site ID: 913-008-376
Site Name: Wolcott SE
Site Location: Intn of SR-322 & Meriden-Waterbury Tnpke
Wolcott, CT 06716

Performed By: Prabhakar Kumar Rughoobur   Date: 9/24/02

Ant System ONE Owner: AT&T
Sector: 3
Azimuth: 100/220/350

Ant System TWO Owner: Verizon (Cellular Service)
Sector: 3
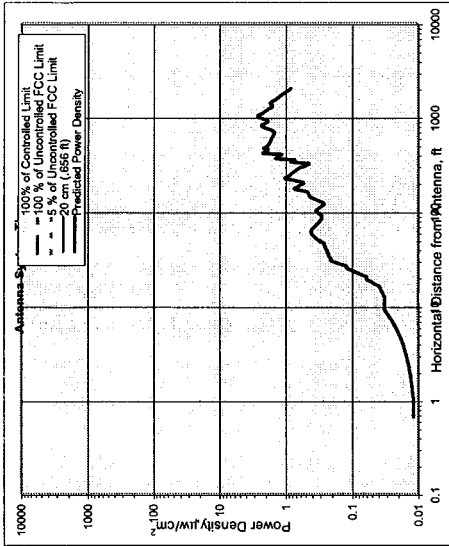Azimuth: 27/147/267

Cingular Wireless MPE :   6.3

The combined % MPE with Cingular and remaining systems   7.335778014

9/24/2002

Antenna System Three

	units	Value
Frequency	MHz	6404.79
# of Channels	#	2
Max ERP/Ch	Watts	5129000.00
Max Pwr/Ch Into Ant.	Watts	398.14
(Center of Radiator)	feet	65.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		UHX10-59
Max Ant Gain	dBd	41.10
Down tilt	degrees	0.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	10.00
Ant HBW	degrees	1.10
Distance to Ant$_{bottom}$	feet	55.00
WOS?	Y/N?	n

Ant System Three Owner: Verizon (MW Dish 1)
Sector: 1
Azimuth 100

Antenna System Four

	units	Value
Frequency	MHz	6226.89
# of Channels	#	2
Max ERP/Ch	Watts	2512000.00
Max Pwr/Ch Into Ant.	Watts	537.06
(Center of Radiator)	feet	112.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		UHX6-59
Max Ant Gain	dBd	36.70
Down tilt	degrees	0.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	6.00
Ant HBW	degrees	1.80
Distance to Ant$_{bottom}$	feet	104.00
WOS?	Y/N?	n

Ant System Four Owner: Verizon (MW Dish2)
Sector: 1
Azimuth: 200

Antenna System Five

	units	Value
Frequency	MHz	6404.79
# of Channels	#	2
Max ERP/Ch	Watts	468000.00
Max Pwr/Ch Into Ant.	Watts	100.06
(Center of Radiator)	feet	118.00
Calculation Point	feet	5.00
(above ground or		0.00
roof surface)		0.00
Antenna Model No.		UHX6-59
Max Ant Gain	dBd	36.70
Down tilt	degrees	0.00
Miscellaneous Att.	dB	0.00
Height of aperture	feet	6.00
Ant HBW	degrees	1.80
Distance to Ant$_{bottom}$	feet	110.00
WOS?	Y/N?	n

Ant System Five Owner: Verizon (MW Dish3)
Sector: 1
Azimuth: 200

9/24/2002

10. For Further Information

Additional information about the environmental impact of RF energy from personal wireless antenna facilities can be obtained from the Federal Communications Commission:

Dr. Robert Cleveland
Federal Communications Commission
Office of Engineering and Technology
Washington, DC 20554

RF Safety Program: 202-418-2464
Internet address: rfsafety@fcc.gov
RF Safety Web Site: www.fcc.gov/oet/rfsafety

11. References

[1]   The Communications Act of 1934, as amended by the Telecommunications Act of 1996, 47 U.S.C. Section 332 (c)(7)(B)(iv).

[2]   *Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation*, Notice of Proposed Rulemaking, ET Docket 93-62, 8 FCC Rcd 2849 (1993).

[3]   *Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation,* Report and Order, ET Docket 93-62, FCC 96-326, adopted August 1, 1996. 61 Federal Register 41006 (1996).

[4]   *Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation*, Second Memorandum Opinion and Order, ET Docket 93-62, adopted August 25, 1997.

[5]   *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields*, OET Bulletin 65, August, 1997.

CINGULAR WIRELESS
Antenna Modification

Site Address: 347 East Street, Wolcott
exempt modification

Tower Owner/Manager: Crown Atlantic Company LLC

Antenna configuration   Antenna center line – current 158', proposed 162'

Current and/or approved: 12 DB846H80 or comparable

Planned: 9 CSS DUO4-8670 or comparable
6 tower mount amplifiers
1 LMU (at 25')

Power Density:

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 4.7% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 6.3%, or an additional 1.6% of the standard.

Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm²)	Standard Limits (mW/cm²)	Percent of Limit
SNET	158	880 - 894	19	100	0.0274	0.5867	4.7

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm²)	Standard Limits (mW/cm²)	Percent of Limit
SNET TDMA	162	880 - 894	16	100	0.0219	0.5867	3.7
SNET GSM	162	880 - 894	2	296	0.0081	0.5867	1.4
SNET GSM	162	1930 - 1935	2	427	0.0117	1.0000	1.2
Total							6.3%

Structural information: Please see attached. Modifications are to be made by AT&T Wireless, per AT&T Wireless agreement with Crown, and will be reflected in a filing to be made by AT&T Wireless.