



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

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

May 6, 2009

Thomas J. Regan, Esq.
Brown Rudnick LLP
CityPlace I, 185 Asylum Street
Hartford, CT 06103

RE: **EM-T-MOBILE-004-090409** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 10 Redwood Lane, Avon, Connecticut.

Dear Attorney Regan:

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

- The proposed coax lines shall be installed inside the monopole's shaft;
- The proposed tower mounted amplifiers shall be installed behind the panel antennas; and
- The Council shall be notified in writing that the coax and tower mounted amplifiers were installed as specified.

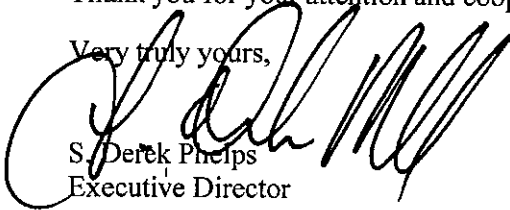
The proposed modifications are to be implemented as specified here and in your notice dated April 9, 2009, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations 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,



S. Derek Phelps
Executive Director

SDP/MP/laf

- c: The Honorable John F. Carlson, Chairman Town Council, Town of Avon
- Philip K. Schenck, Jr., Town Manager, Town of Avon
- Steven V. Kushner, Town Planner, Town of Avon
- SBA Network Services, Inc.

THOMAS J. REGAN
Direct Dial: (860) 509-6522
tregan@brownrudnick.com

CityPlace I
185 Asylum
Street
Hartford
Connecticut
06103
tel 860.509.6500
fax 860.509.6501

Via Hand Delivery

April 9, 2009

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RECEIVED
APR - 9 2009
CONNECTICUT
SITING COUNCIL

RE: T-Mobile USA, Inc - Exempt Modification

Dear Mr. Caruso:

On behalf of T-Mobile USA, Inc., enclosed for filing are an original and five (5) copies of a Notice to Make an Exempt Modification to an Existing Facility for each of the following:


1. Avon @ 10 Redwood Lane;
2. Bloomfield @ 100 Filley Street;
3. Cheshire @ 500 Highland Avenue;
4. Middletown @ 90 Industrial Park Road;
5. New Britain @ 125 North Mountain Road; and
6. Southington @ 1394 Route 322.

I have also enclosed a sixth copy of each Notice which I would like to have date-stamped and returned to the courier delivering this package.

Also enclosed are six (6) checks in the amount of \$500.00 each to cover the filing fee. If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK BERLACK ISRAELS LLP

By: 
Thomas J. Regan

TJR/bh
Enclosures

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Daniel F. Caruso, Chairman
April 9, 2009
Re: T-Mobile USA, Inc. Notice of Exempt Modifications
Page 2

cc/encls: via 1st Class Mail:

John F. Carlson, Chairman
Town Council
Avon Town Hall
60 West Main Street
Avon, CT 06001

Sydney T. Schulman, Mayor
Bloomfield Town Hall
800 Bloomfield Avenue
Bloomfield, CT 06002

Matt Hall, Chairman
Town Council
Town of Cheshire
84 South Main Street
Cheshire, CT 06410

Sebastian N. Giuliano, Mayor
Municipal Building
245 deKoven Drive
Middletown, CT 06457

Timothy Stewart, Mayor
New Britain City Hall
27 West Main Street
New Britain, CT 06051

John Barry, Chairman
Town Council
Southington Town Office Building
75 Main Street
Southington, CT 06489

CONNECTICUT SITING COUNCIL

EM-T-MOBILE-004-090409

In re:

T-Mobile USA, Inc. Notice to Make an Exempt : EXEMPT MODIFICATION NO. _____
Modification to an Existing Facility at 10 :
Redwood Lane, Avon, Connecticut. : April 9, 2009

ORIGINAL RECEIVED
APR - 9 2009

NOTICE OF EXEMPT MODIFICATION CONNECTICUT
SITING COUNCIL

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), T-Mobile USA, Inc. ("T-Mobile") hereby gives notice to the Connecticut Siting Council ("Council") and the Town of Avon of T-Mobile's intent to make an exempt modification to an existing monopole (the "Tower") located 10 Redwood Lane in Avon, Connecticut. Specifically, T-Mobile plans to upgrade its wireless system in Connecticut by implementing its Universal Mobile Telecommunications System ("UMTS"). UMTS is a third-generation ("3G") technology that utilizes a code division multiple access ("CDMA") base to allow for fast and large data transfers. To accomplish this upgrade, T-Mobile must modify its antenna and equipment configurations at many of its existing sites.

Once the UMTS upgrade is complete, T-Mobile will operate on a more unified communication system, allowing international wireless telephones to function world-wide. Furthermore, UMTS will enhance Global Positioning System ("GPS") navigation capabilities and provide emergency responders with more advanced tracking capabilities. The proposed UMTS technology is compatible with the existing second-generation ("2G") Global System for Mobile Communication ("GSM") currently on the Tower and the proposed upgrade is expected

to enhance the existing 2G system. In order to accomplish the upgrade at this site, T-Mobile plans to add UMTS technology, update GSM technology and install associated electronic equipment at the base of the Tower.

Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), T-Mobile's plans do not constitute a modification subject to the Council's review because T-Mobile will not change the height of the Tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

The Tower is a 105-foot monopole located 10 Redwood Lane, Avon, Connecticut, (41.6531, -72.8769). Multiple carriers are on the Tower. The Tower is owned by SBA Telecommunications, Inc. Currently, T-Mobile has 3 antennas and 6 Tower Mounted Amplifiers ("TMA") located on the Tower with a centerline of 106 feet. A site plan with Tower specifications is attached.

T-Mobile proposes to add 3 UMTS antennas to the Tower. T-Mobile also plans to remove and replace 3 of its existing GSM TMA with 3 new GSM Twin TMA for PCS and plans to remove and replace 3 of its existing TMA with 3 UMTS Twin TMA for PCS. The proposed antennas and TMA will have a centerline of 106 feet. The 3 existing antennas will remain at the current position of 106 feet centerline on the Tower. To confirm the Tower can support these changes, T-Mobile commissioned FDH Engineering, Inc. to perform a structural analysis of the Tower (attached). According to the structural analysis, dated March 27, 2009, "...the foundation should have the necessary capacity to support the existing and proposed loading" (Page 3, Structural Analysis Report).

In addition, T-Mobile proposes to install the UMTS equipment cabinet on its existing concrete pad which is approximately 10 feet by 20 feet. Hence, no increase in the size of the concrete pad is necessary. T-Mobile plans to utilize its 12 existing 1-5/8 inch coax cables and proposes to install power wiring and telephone wiring at this site to service the proposed equipment.

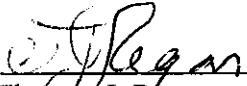
Therefore, excluding brief, minor, construction-related noise during the addition of the antennas and the installation of the equipment cabinet, T-Mobile's changes to the Tower will not increase noise levels at the site.

The new antennas and the new TMA will not adversely impact the health and safety of the surrounding community or the people working on the Tower. The total radio frequency exposure measured around the Tower will be well below the National Council on Radiation Protection and Measurements' ("NCRP") standard adopted by the Federal Communications Commission ("FCC"). The worst-case power density analysis measured at the base of the Tower indicates that T-Mobile's antennas will emit 9.32% of the NCRP's standard for maximum permissible exposure. A cumulative power density analysis indicates that together, all of the antennas on the Tower will emit only 32.73% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be well below the FCC mandated radio frequency exposure limits in all locations around the Tower, even with extremely conservative assumptions. The power density analysis is attached.

In conclusion, T-Mobile's proposed plan to add antennas and remove and replace TMA at this site does not constitute a modification subject to the Council's jurisdiction because T-Mobile will not increase the height of the Tower, will not extend the boundaries of the site, will

not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. See Conn. Agencies Regs. § 16-50j-72.

T-Mobile USA, Inc.

By:  _____

Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522
Fax - 860.509.6622

Certificate of Service

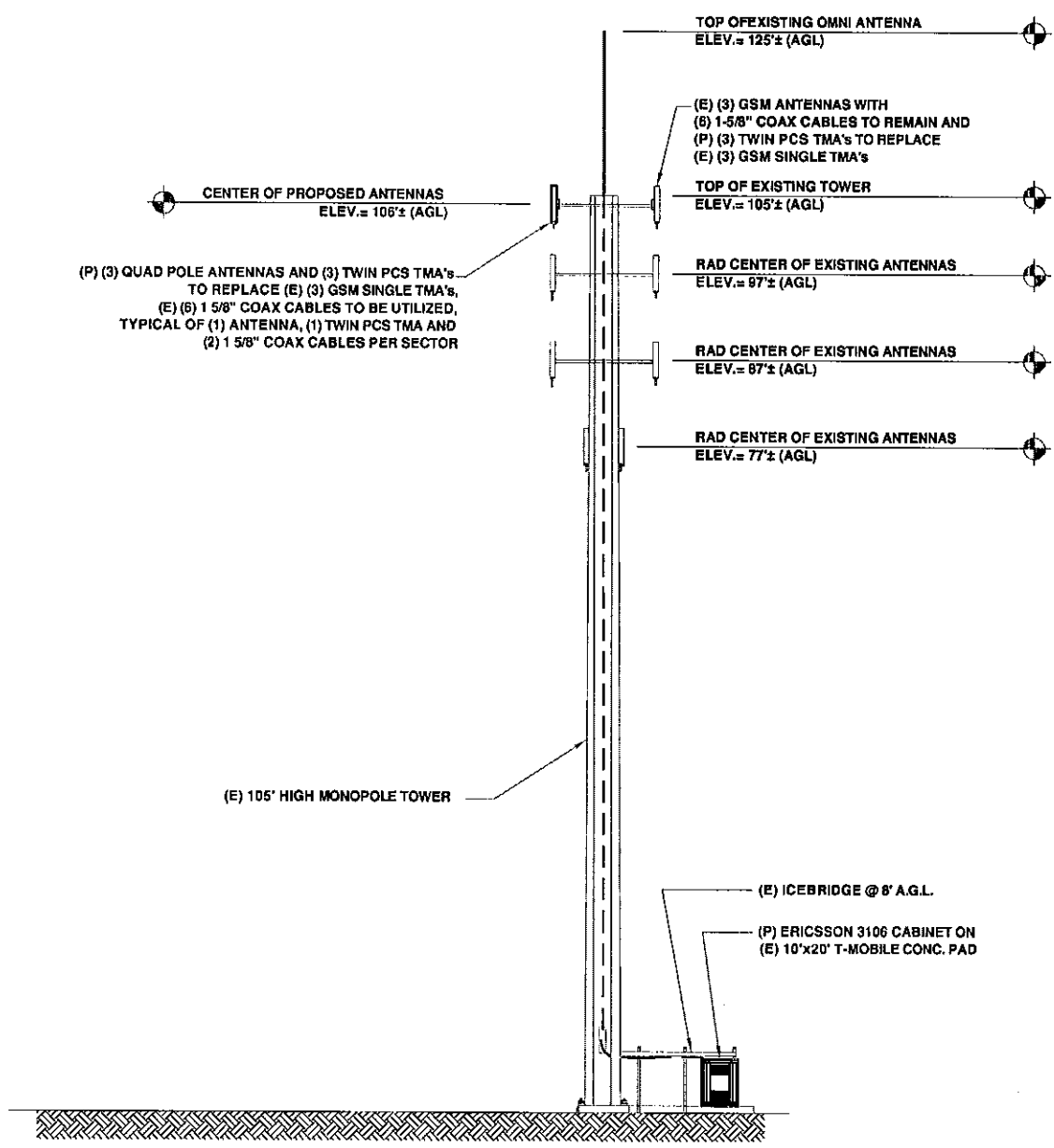
This is to certify that on this 9th day of April, 2009, the foregoing Notice of Exempt

Modification was sent, via first class mail, to the following:

Town of Avon
John F. Carlson, Chairman
Town Council
Avon Town Hall
60 West main Street
Avon, CT 06001

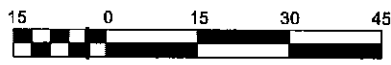
By: 
Thomas J. Regan

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ELEVATION

SCALE: 1" = 30'-0"



ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE'S STRUCTURAL & RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

TRANSCEND WIRELESS 10 INDUSTRIAL AVE. MAHWAH, NJ 0740 OFFICE: (210) 316-2085 FAX: (210) 684-0666 FOR OMNIPOINT COMMUNICATIONS, INC. DBA T-MOBILE USA, INC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 OFFICE: (860) 692-7100 FAX: (860) 692-7159	 ATLANTIS GROUP 15 Cypress St., Suite 300 Newton Centre, MA 02459 Office: 617-965-0789 Fax: 617-663-6032	SITE NUMBER: CT11380C	APPROVALS	
		SITE NAME: SBA AVON/ RT 177	Site Owner _____ Date _____	
ADDRESS: 10 REDWOOD LANE AVON, CT 06001	Construction Manager _____ Date _____			
DRAWN BY P.J.D.	RF Engineer _____ Date _____			
	Site Acquisition _____ Date _____			
	The above parties hereby approve and accept these documents and authorize the contractor to proceed with the construction described herein, all construction documents are subject to review by the local building department and any changes or modifications they may impose.			
		0: FINALLE _____ 04-06-09		
		A: REVIEW _____ 02-05-09		
		REVISION _____ DATE _____		



**Structural Analysis for
SBA Network Services, Inc.**

105' Monopole

**Site Name: Avon
Site ID: CT01498-S**

FDH Project Number 09-03212E S1

Prepared By:

Krystyn Wagner, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, PE
Vice President
CT PE License No. 25842

FDH Engineering, Inc.

2730 Rowland Road
Raleigh, NC 27615
(919)-755-1012
info@fdh-inc.com



March 27, 2009

Prepared pursuant to ANSI/TIA-222-G Structural Standards for Antenna Supporting Structures and Antennas

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Avon, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from the Pirod, Inc. (Engineering No. A-117586) original design drawings dated September 26, 2000 and SBA Network Services, Inc.

The *basic design wind speed* per *ANSI/TIA-222-G* standards is 105 MPH without ice and 50 MPH with 1" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from T-Mobile in place at 106 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standards. Furthermore, provided the foundation was constructed per the original design drawings (see Pirod Eng. No. A-117586), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower was properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *ANSI/TIA-222-G* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax lines should be installed inside the monopole shaft.
2. The proposed TMAs should be installed behind the proposed panel antennas.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

No.	Centerline Elevation (ft)	Coax and Lines ¹	Carrier	Mount Type	Description
1	106 ²	(1) 7/8"	Farmington Woods	(1) Low Profile Platform	(1) 20' Omni
2-7	106 ^{3,4}	(12) 1-5/8"	T-Mobile		(6) EMS RR901702DP (12) Allen FE15501P77-75 TMAs
8-19	97	(12) 1-5/8"	AT&T	(1) Low Profile Platform	(9) Allgon 7184 (3) Powerwave 7770 panels (6) Powerwave LGP 21401 TMAs
20-31	87 ⁵	(12) 1-5/8"	Sprint	(1) Low Profile Platform	(12) Decibel DB980H90
32-34	77	(6) 1-5/8"	Pocket	Flush	(3) Kathrein 742-213
35	30	(1) 1/2"	Sprint	Standoff	(1) GPS

- 1 The existing coax is located inside the pole's shaft, unless otherwise noted.
- 2 The elevations of all omnis are listed to the base of the antennas.
- 3 Currently T-Mobile has (3) EMS RR90-17-02DP panels, (3) Allen FE15501P77-75 TMAs and (6) 1-5/8" coax installed at 106 ft. According to information provided by SBA, T-Mobile may install (6) antennas, (12) TMAs, and (12) coax at 106 ft.
- 4 The loading for T-Mobile at 106 ft will be altered. See the proposed loading below.
- 5 Currently Sprint has (6) Decibel DB980H90 panels and (6) 1-5/8" coax installed at 87 ft. According to information provided by SBA, Sprint may install (12) antennas and (12) coax at 87 ft. Analysis performed with total leased loading in place.

Proposed Loading:

No.	Centerline Elevation (ft)	Coax and Lines	Carrier	Mount Type	Description
1-3	106 ¹	(12) 1-5/8"	T-Mobile	(1) Low Profile Platform	(3) EMS RR901702DP (3) RFS APX16PV-16PVL (6) Allen FE15501P77-75 TMAs (6) OneBase Twin TMAs

- 1 This represents the final loading for T-Mobile. According to information provided by SBA, T-Mobile will replace (3) EMS RR90-17-02DP antennas and (6) Allen FE15501P77-75 TMAs with (3) RFS APX16PV-16PVL antennas and (6) OneBase Twin TMAs.

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	42 ksi
Base Plate	36 ksi
Anchor Bolts	105 ksi

Table 3 displays the ratio (as a percentage) of actual force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	105 - 80	Pole	P36x3/8	17.1	Pass
L2	80 - 60	Pole	P42x3/8	29.7	Pass
L3	60 - 40	Pole	P48x3/8	38.5	Pass
L4	40 - 20	Pole	P54x3/8	45.1	Pass
L5	20 - 0	Pole	P60x3/8	50.1	Pass
			Base Plate	OK	Pass
			Anchor Bolts	OK	Pass
			Flange Plates	OK	Pass
			Flange Bolts	OK	Pass

Table 4 – Maximum Base Reactions

Load Type	Current Analysis (ANSI/TIA-222-G)	Original Design (TIA/EIA-222-F)
Axial	36 k	41 k
Shear	24 k	31 k
Moment	1,726 k-ft	2,555 k-ft

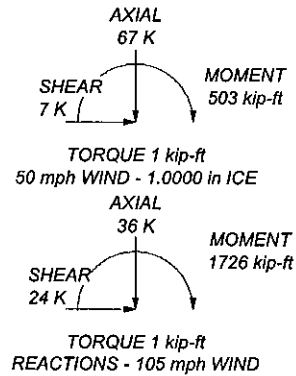
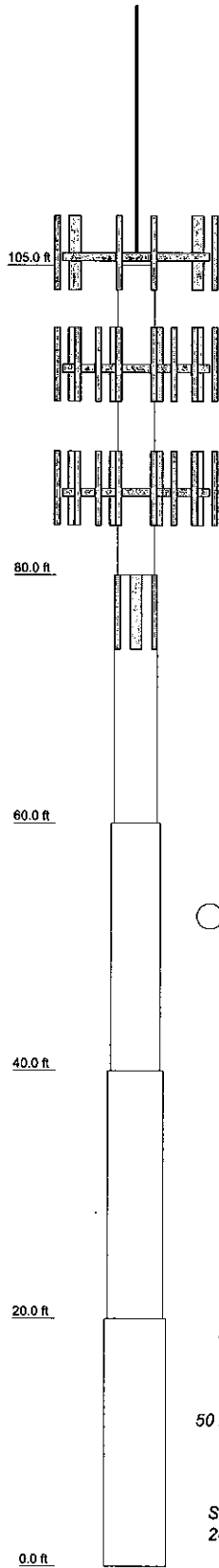
GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

Section	1	P36x3/8	25.00	3.6
Section	2	P42x3/8	20.00	3.3
Section	3	P48x3/8	20.00	3.6
Section	4	P54x3/8	20.00	4.3
Section	5	P60x3/8	20.00	4.8
Grade	A53-B-42			
Weight (K)	19.8			



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20' Omnl (Famintgon Woods)	106	(3) 7184 w/Mount Pipe (ATI)	97
(2) RR90-17-02DP w/Mount Pipe (T-Mobile)	106	(3) 7184 w/Mount Pipe (ATI)	97
(2) RR90-17-02DP w/Mount Pipe (T-Mobile)	106	Powerwave 7770 w/ Mount Pipe (ATI)	97
(2) RR90-17-02DP w/Mount Pipe (T-Mobile)	106	Powerwave 7770 w/ Mount Pipe (ATI)	97
(2) RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	106	Powerwave 7770 w/ Mount Pipe (ATI)	97
(2) RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	106	(2) TMA - Powerwave LGP21401 (ATI)	97
(2) RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	106	(2) TMA - Powerwave LGP21401 (ATI)	97
(2) Allen FE15501P77-75 TMA (T-Mobile)	106	Low Profile Platform (ATI)	97
(2) Allen FE15501P77-75 TMA (T-Mobile)	106	(4) DB980H90 w/Mount Pipe (Sprint)	87
(2) Allen FE15501P77-75 TMA (T-Mobile)	106	(4) DB980H90 w/Mount Pipe (Sprint)	87
(2) Allen FE15501P77-75 TMA (T-Mobile)	106	(4) DB980H90 w/Mount Pipe (Sprint)	87
(2) OneBase Twin TMA (T-Mobile)	106	Low Profile Platform (Sprint)	87
(2) OneBase Twin TMA (T-Mobile)	106	Kathrein 742-213 w/ Mount Pipe (Pocket)	77
(2) OneBase Twin TMA (T-Mobile)	106	Kathrein 742-213 w/ Mount Pipe (Pocket)	77
Low Profile Platform (T-Mobile)	106	Kathrein 742-213 w/ Mount Pipe (Pocket)	77
(3) 7184 w/Mount Pipe (ATI)	97	Slide Mount Standoff (1) (Sprint)	30
		GPS (Sprint)	30

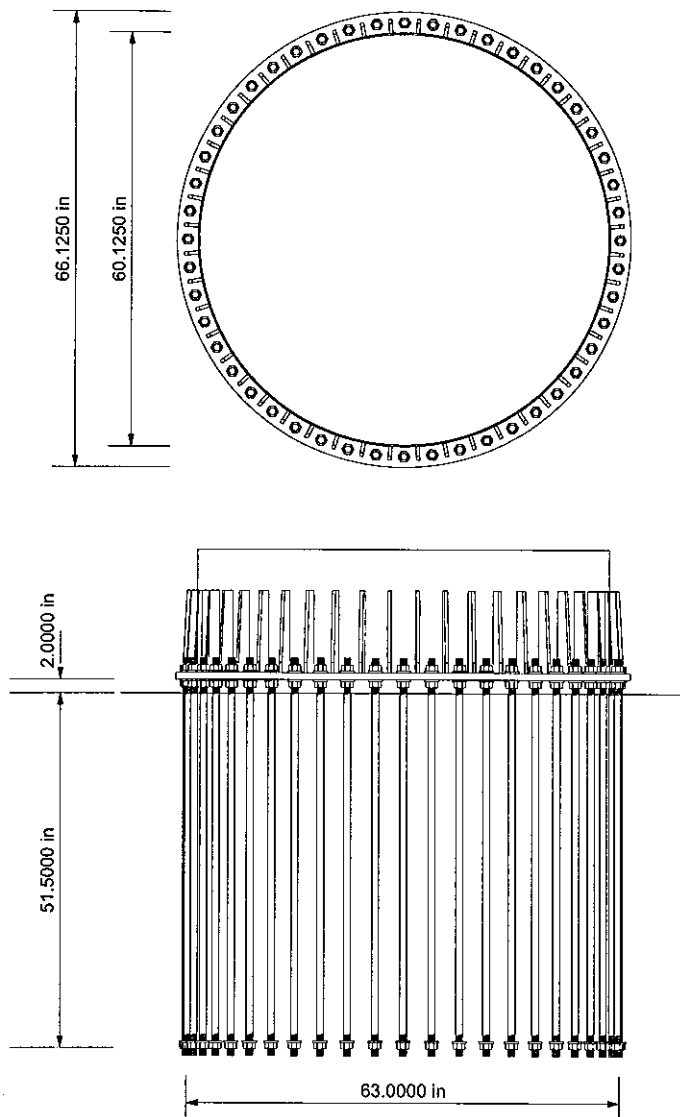
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. TOWER RATING: 55.1%

Tower Analysis	FDH Engineering, Inc.		Job: Avon, CT01498-S		
	2730 Rowland Road		Project: 09-03212E S1		
	Raleigh, NC 27615		Client: SBA	Drawn by: Krystyn Wagner	App'd:
	Phone: (919) 755-1012		Code: TIA-222-G	Date: 04/01/09	Scale: NTS
	FAX: (919) 755-1031		Path:	Dwg No. E-1	



FOUNDATION NOTES

1. Plate thickness is 1.0000 in.
2. Plate grade is A36.
3. Anchor bolt grade is F1554-105.
4. f_c is 4 ksi.

FDH Engineering, Inc. 2730 Rowland Road Raleigh, NC 27615 Phone: (919) 755-1012 FAX: (919) 755-1031		Job: Avon, CT01498-S	
		Project: 09-03212E S1	
Tower Analysis	Client: SBA	Drawn by: Krystyn Wagner	App'd:
	Code: TIA-222-G	Date: 04/01/09	Scale: NTS
	Path:		Dwg No. F-1

Technical Memo

To: Transcend
From: Farid Marbough - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11380C
Date: April 3, 2009

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Monopole at 10 Redwood Lane, Avon, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the (1935-1944.8), (2140-2145), (2110-2120)MHz frequency Band.
- 2) The antenna array consists of three sectors, with 2 antennas per sector.
- 3) The model number for GSM antenna is RR90-17-02DP.
- 3) The model number for UMTS antenna is APX16DWV-16DWV.
- 4) GSM antenna center line height is 106 ft.
- 4) UMTS antenna center line height is 106 ft.
- 5) The maximum transmit power from any GSM sector is 1763.44 Watts Effective Radiated Power (EIRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2485.02 Watts Effective Radiated Power (EIRP) assuming 2 channels per sector.
- 6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) The average ground level of the studied area does not change significantly with respect to the transmitting location

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile antenna installation on a Monopole at 10 Redwood Lane, Avon, CT, is 0.09321 mW/cm². This value represents 9.321% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

The combined Power Density from other carriers is 23.41%. The combined Power Density for the site is 32.731% of the M.P.E. standard.

Connecticut Market



Worst Case Power Density

Site: CT11380C
Site Address: 10 Redwood Lane
Town: Avon
Tower Height: 110 ft.
Tower Style: Monopole

GSM Data		UMTS Data	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	RR90-17-02DP	Antenna Model	APX16DWV-16DWV
Cable Size	1 5/8 in.	Cable Size	1 5/8 in.
Cable Length	136 ft.	Cable Length	136 ft.
Antenna Height	106.0 ft.	Antenna Height	106.0 ft.
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	16.5 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0116 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.5776 dB	Total Cable Loss	1.5776 dB
Total Attenuation	6.0776 dB	Total Attenuation	3.0776 dB
Total EIRP per Channel (In Watts)	53.43 dBm 220.43 W	Total EIRP per Channel (In Watts)	60.94 dBm 1242.51 W
Total EIRP per Sector (In Watts)	62.46 dBm 1763.44 W	Total EIRP per Sector (In Watts)	63.95 dBm 2485.02 W
nsg	10.4224	nsg	14.9224
Power Density (S) = 0.038688 mW/cm ²		Power Density (S) = 0.054519 mW/cm ²	
T-Mobile Worst Case % MPE =		9.3208%	

Equation Used:

$$S = \frac{(1000 \text{ (grf)})^2 (\text{Power}) \cdot 10^{(nsg/10)}}{4\pi (R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total

Carrier	% of Standard
Verizon	
Cingular	6.6700 %
Sprint	5.9600 %
AT&T Wireless	
Nextel	
MetroPCS	
Other Antenna Systems	10.7800 %
Total Excluding T-Mobile	23.4100 %
T-Mobile	9.3208
Total % MPE for Site	32.7308%



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

April 17, 2009

The Honorable John F. Carlson
Chairman Town Council
Town of Avon
60 West Main Street
Avon, CT 06001-3743

RE: **EM-T-MOBILE-004-090409** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 10 Redwood Lane, Avon, Connecticut.

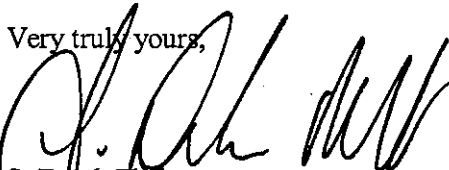
Dear Mr. Carlson:

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

If you have any questions or comments regarding this proposal, please call me or inform the Council by May 1, 2009.

Thank you for your cooperation and consideration.

Very truly yours,


S. Derek Phelps
Executive Director

SDP/jb

Enclosure: Notice of Intent

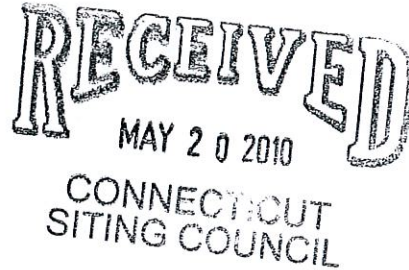
c: Steven V. Kushner, Town Planner, Town of Avon
Philip K. Schenck, Jr., Town Manager, Town of Avon

THOMAS J. REGAN
Direct Dial: (860) 509-6522
tregan@brownrudnick.com

CityPlace I
185 Asylum
Street
Hartford
Connecticut
06103
tel 860.509.6500
fax 860.509.6501

Via First Class Mail

May 19, 2010



Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: T-Mobile Exempt Modifications Follow-Up Documentation

Dear Chairman Caruso:

Enclosed please find documentation certifying that the conditions contained in the Connecticut Siting Council's letters for the five (5) Exempt Modification sites listed below have been met.

1. EM-T-MOBILE-077-090507 @ 93 Lake Street in Manchester, Connecticut
2. EM-T-MOBILE-146-090520 @ 60 Industrial Park Road in Vernon, Connecticut
3. EM-T-MOBILE-132-090515 @ 151 Sand Hill Road in South Windsor, Connecticut
4. EM-T-MOBILE-007-090406 @ 260 Beckley Road in Berlin, Connecticut.
5. EM-T-MOBILE-004-090409 @ 10 Redwood Lane in Avon, Connecticut

If you have any questions, please do not hesitate to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: 
Thomas J. Regan

Cc: w/encl (Via First Class Mail):
Louis A. Spadaccini, Mayor, Town of Manchester
Matthew Streeter, Mayor, Town of South Windsor
Jason L. McCoy, Mayor, Town of Vernon
Adam P. Salina, Mayor, Town of Berlin
John F. Carlson, Chairman Town Council, Town of Avon

REPORT OF THE
COMMISSIONER OF THE
LAND OFFICE



OF THE
LANDS BELONGING TO
THE STATE OF CALIFORNIA

FOR THE YEAR ENDING DECEMBER 31, 1900

AND
FOR THE YEAR ENDING DECEMBER 31, 1901

AND
FOR THE YEAR ENDING DECEMBER 31, 1902

BY
J. W. WELLS



AND
FOR THE YEAR ENDING DECEMBER 31, 1903



February 1, 2010

Mr. Hans Fiedler
T-Mobile USA
35 Griffin Road South
Bloomfield, CT 06002

RE: T-Mobile – CT11380 – SBA Avon/RT 177
10 Redwood Lane, Avon, CT

Dear Mr. Fiedler:

The construction has been completed at the subject site. Armor tower performed an inspection of the construction for conformity to the construction drawings by Atlantis Group dated April 21, 2009 and a tower analysis by FDH Engineering dated September 15, 2008. Weather conditions at the time of the inspection were 40°F and partly cloudy with light winds.

Proposed Configuration

The construction drawings detail the following changes to the existing structure:

- Add (3) APX16DWV-16DWV-S-E-ACU @ 106' for T-Mobile on existing antenna mount pipes.
- Add (3) UMTS TMA's mounted behind the proposed antennas on the existing mount pipes.
- Add (1) Ericsson 3106 UMTS cabinet on an existing concrete pad.
- Add (6) 1-5/8" feed lines inside the monopole shaft.

Findings

All the proposed equipment was found securely installed. TMA's were mounted with round member adapters instead of the 0.43" U-bolts. Also, the TMA's were installed above the platform instead of below as shown in the construction drawings. These findings are not significant.

Some paint scrapes were visible on the side of the monopole. These appear to be from some impact to the tower. No rust was visible at the impact site indicating the galvanizing was not damaged. Minor rusting was visible where it appears a chain mount was removed.

Conclusions

The construction was found to be adequate within the scope of this inspection. The intact galvanizing at the locations of the scraped paint indicates the impacts were not significant enough to cause structural damage.

No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original tower design, materials, fabrication, or potential erection deficiencies. In addition, the conclusions expressed herein are based upon the information contained within the aforementioned documents, as well as the results of the site survey and photographic documentation of the site. Any information contrary to that assumed for the purpose of preparing this assessment could alter the findings and conclusions as stated.

We appreciate the opportunity to provide our services to T-Mobile. If you have any questions concerning this analysis, please contact us.

Sincerely,



Jeff Triezenberg, P.E.
ARMOR TOWER, INC.

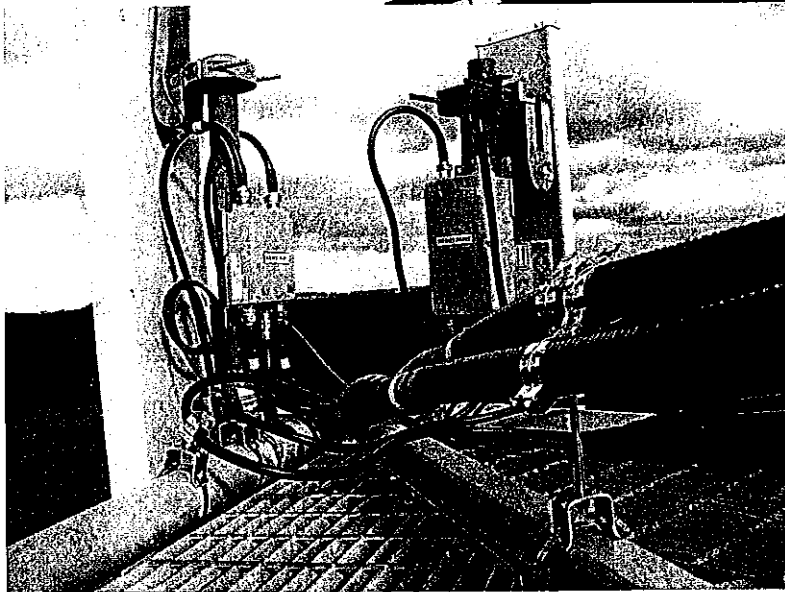
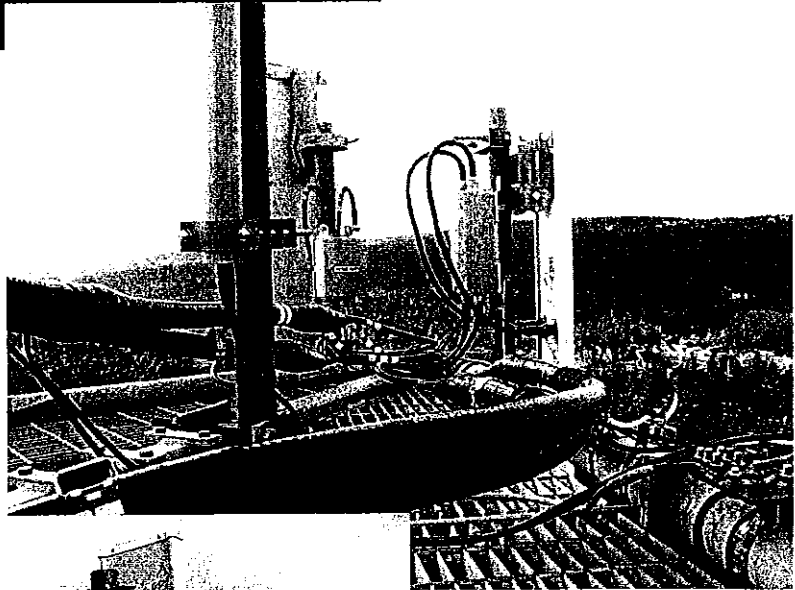
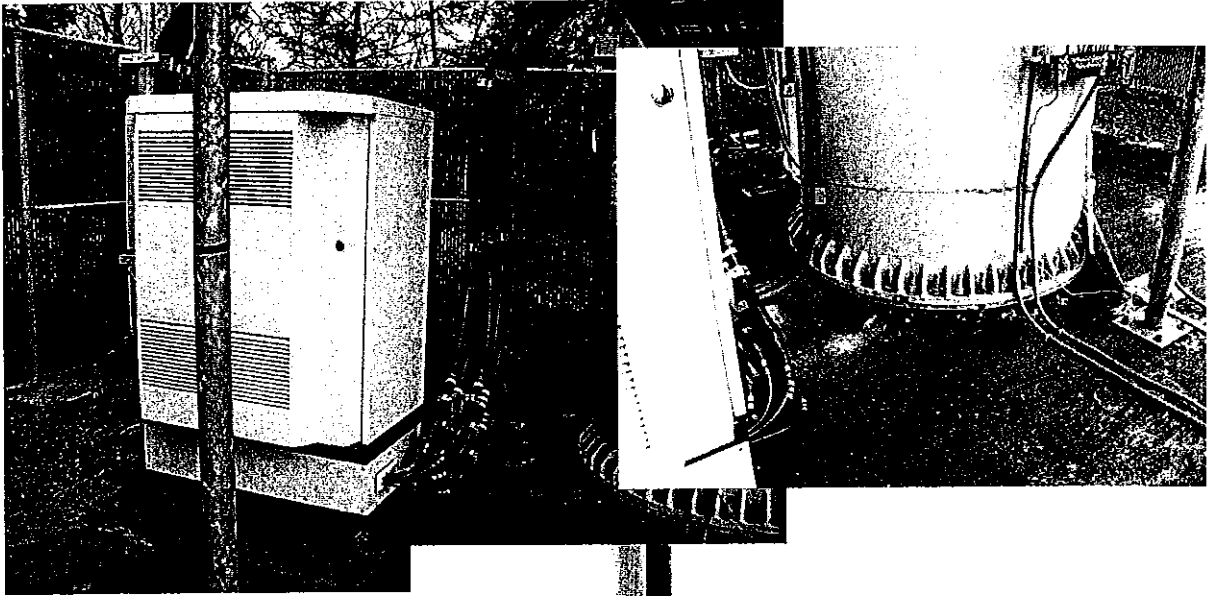
(enclosures)





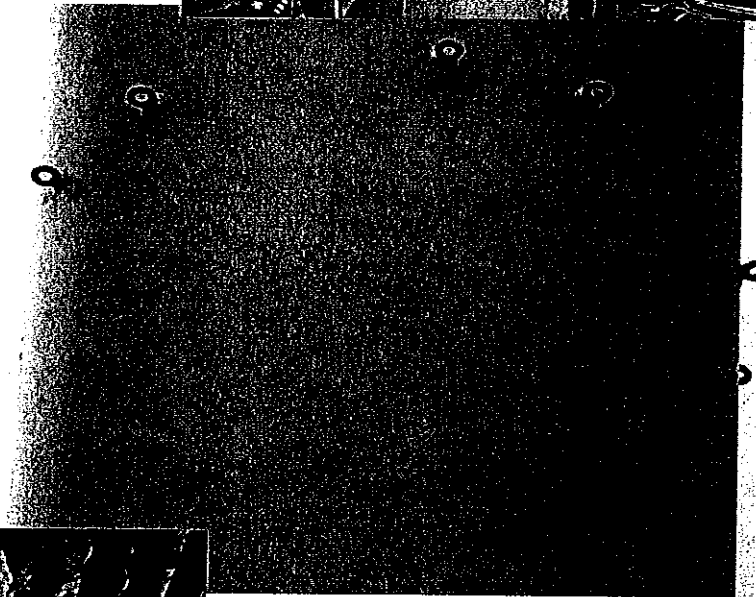
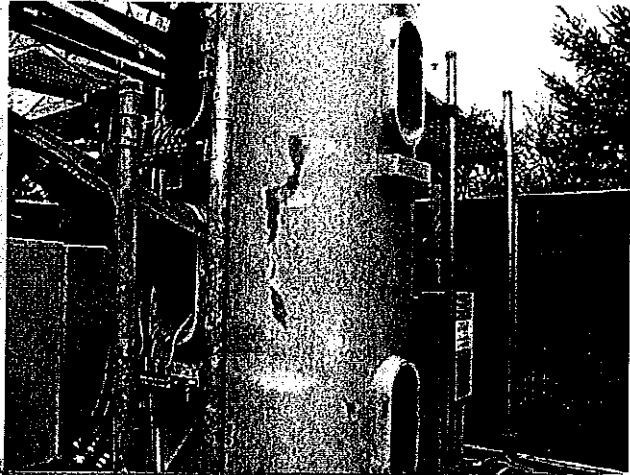
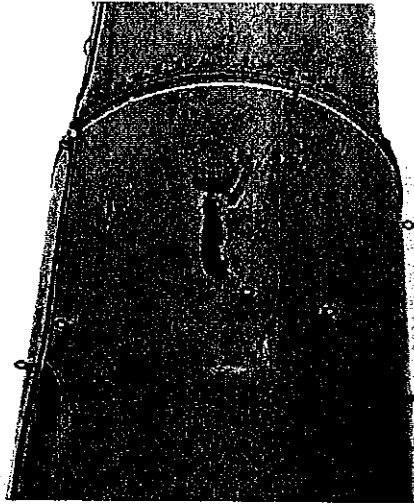
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