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

July 28, 2011

Jacqueline A. Slaga
Tower Resource Management
30 Lyman Street, Suite 12
Westborough, MA 01581

RE: **TS-METROPCS-049-110713MA** - MetroPCS Massachusetts, LLC d/b/a MetroPCS request for an order to approve tower sharing at an existing telecommunications facility located at 4 Oliver Road, Enfield, Connecticut.

Dear Ms. Slaga:

At a public meeting held July 28, 2011, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including 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;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council. This facility has 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. 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated July 13, 2011, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein

Robert Stein
Chairman

LR

LR/CDM/laf

c: The Honorable Patrick L. Tallarita, Mayor, Town of Enfield
Matthew W. Coppler, Town Manager, Town of Enfield
Jose Giner, Director of Planning and Community Development, Town of Enfield
Crown Castle USA, Inc.

G:\EM & TS\MetroPCS(MA)\Enfield\dc072811OliverRd.DOC

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July 13, 2011

The Honorable Patrick L. Tallarita
Mayor
Town of Enfield
820 Enfield Street
Enfield, CT 06082

RE: **TS-METROPCS-049-110713MA** – MetroPCS Massachusetts, LLC d/b/a MetroPCS request for an order to approve tower sharing at an existing telecommunications facility located at 4 Oliver Road, Enfield, Connecticut.

Dear Mayor Tallarita:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for July 28, 2011, at 1:00 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by July 27, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

L Roberts

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Tower Sharing

c: Matthew W. Coppler, Town Manager, Town of Enfield
Jose Giner, Director of Planning and Community Development, Town of Enfield

CSC
CONNECTICUT SITING COUNCIL

TS-METROPCS-049-110713MA

Jacqueline A. Slaga
Tower Resource Management
30 Lyman Street, Suite 12
Westborough, MA01581
401-855-0824
jackieslaga@gmail.com

July 13, 2011

Ms. Linda Roberts, Executive Director ORIGINAL
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: MetroPCS application to allow the shared use of an existing telecommunications facility located at 4 Oliver, Road, Enfield, CT.

Dear Ms. Roberts:

On behalf of my client MetroPCS, I respectfully enclose an original and 24 copies of the above noted Applications, as well as a check in the amount of 625.00, the filing fee.

Should you have any questions in this matter, please do not hesitate to contact me.

Very truly yours,

Jackie Slaga

Jacqueline A. Slaga
Tower Resource Management
30 Lyman Street, Suite 12
Westborough, MA01581
401-855-0824
jackieslaga@gmail.com

July 13, 2011

Town of Enfield
Town Hall
820 Enfield Street
Enfield, CT 06082
Attn: Matthew W. Coppler, Town Manage

Re: Proposed modification to existing telecommunications facility located at 4 Oliver Road.

Dear Town Manager Coppler:

I represent MetroPCS. On July 13, 2011, MetroPCS filed an Application for Tower Sharing with the Connecticut Siting Council, seeking Council authorization of a proposed modification to the existing telecommunications tower at 4 Oliver Road. The proposed installation will include the attachment of six (6) antennas on the existing 150 foot Tower, at a centerline mounting height of 80 feet. Thirteen (13) cables will connect the antennas to the ground equipment. All cables will be mounted to the exterior of the tower.

Additionally, MetroPCS plans to locate its equipment within a 10'x16' leased area on a concrete pad within the existing 60'x48' fenced compound. There will be no increase in height of the tower and there will be no other changes made to the site

A copy of the Tower Share Application is attached for your review.

If you have any questions regarding this proposal, please contact me.

Sincerely,

Jackie Slaga

Copy to:

Linda Roberts, Executive Director, Connecticut Siting Council
Kate Rugman, MetroPCS

Jacqueline A. Slaga
Tower Resource Management
30 Lyman Street, Suite 12
Westborough, MA01581
401-855-0824
jackieslaga@gmail.com

July13, 2011

Michael Smyth
Bell Atlantic Mobile,
PMB 353 4017 Washington,
Canonsburg, PA 15317-225

Re: Proposed modification to existing telecommunications facility located at 4 Oliver Road.

Dear Mr. Smyth:

I represent MetroPCS. On July 13, 2011, MetroPCS filed an Application for Tower Sharing with the Connecticut Siting Council, seeking Council authorization of a proposed modification to the existing telecommunications tower at 4 Oliver Road. The proposed installation will include the attachment of six (6) antennas on the 150-foot Tower, at a centerline mounting height of 80 feet. Thirteen (13) cables will connect the antennas to the ground equipment. All cables will be mounted to the exterior of the tower.

Additionally, MetroPCS plans to locate its equipment within a 10'x16' leased area on a concrete pad within the existing 60'x48' fenced compound. There will be no increase in height of the tower and there will be no other changes made to the site

If you have any questions regarding this proposal, please contact me.

Sincerely,

Jackie Slaga

Copy to:

Linda Roberts, Executive Director, Connecticut Siting Council
Kate Rugman, MetroPCS

CONNECTICUT SITING COUNCIL

In re:		
Request of MetroPCS for the Approval	:	
Of the Shared Use of an Existing Facility	:	
Located at 4 Oliver Road,	:	
Enfield, Connecticut	:	**July 13, 2011**

TOWER SHARING APPLICATION

MetroPCS proposes herein to share an existing 150-foot Monopole (the "Tower") located at 4 Oliver Road in Enfield, Connecticut (the "Facility). Pursuant to Connecticut General Statutes Section 16-50aa (the "Statute"), MetroPCS requests a finding from the Connecticut Siting Council (the "Council") that the shared use of this Facility is technically, legally, environmentally, and economically feasible, will meet public safety concerns, will avoid unnecessary proliferation of towers and is in the public interest. MetroPCS further requests an order approving the shared use of this Facility.

The purpose of this request is to use an existing Facility to develop MetroPCS's wireless broadband network. MetroPCS is licensed by the Federal Communications Commission (FCC) to provide PCS Wireless telecommunications service in Connecticut, which includes the area to be served by the proposed installation. The shared use of this Facility avoids the construction of an additional tower in the area to be served.

A. The Facility

The Facility is located at 41-57'-36.2" and-72-35'-32.3". The Tower is a 150 foot monopole located at 4 Oliver Road. The Facility is already occupied by 5 carriers. The existing carriers have approved facilities located at 162 feet on a ten foot extension, 152 feet, 135 feet, 126 feet and 116 feet. MetroPCS has determined that sufficient space and structural capacity exists to allow for the proposed collocation.

B. Proposed Project

MetroPCS will install six (6) HBX-6516DS-VTM antennas and six (6) ATM200-A20 Remote Electric Tilt (RET) applicators will be attached to the back of each antenna on the Tower. MetroPCS plans to mount its installation at a centerline of 106 feet. 12 cables, 7/8" in diameter, will run to the six (6) new HBX-6516DS-VTM antennas, two (2) per panel. One cable, 17/64" in diameter will connect to the RET applicators. All cables will be mounted to the exterior of the tower.

MetroPCS plans to locate its equipment within the existing 60'x48' fenced compound. MetroPCS plans to locate its equipment within its 10'x16' leased area on a concrete pad. MetroPCS also proposes to install an ice bridge to run from its equipment to the Tower. No upgrades to the access road, utilities or parking area will be necessary and no modifications are required to the existing fenced compound.

C. Technical Feasibility

Consistent with the requirements of the Statute, it is technically feasible for MetroPCS to collocate at this Facility. To analyze whether the Facility can support MetroPCS's proposed installation, MetroPCS commissioned Pier Structural Engineering Corp. to perform a structural analysis of the Facility with MetroPCS's proposed installation. The structural analysis is attached. According to the Structural Analysis, May 24, 2011 , the Facility has sufficient capacity to accommodate the proposed loading (Structural Analysis).

D. Legal Feasibility

The Council has the authority, pursuant to the Statute, to issue an order approving the shared use of this Facility. By issuing an order approving MetroPCS's use of the Facility, MetroPCS will be able to proceed with obtaining a building permit for its proposed installation on the Facility. Therefore, consistent with the Statute, MetroPCS's proposal is legally feasible. See attached Letter of Authorization from the Facility owner, allowing MetroPCS to proceed with the design and permitting of the proposed facility.

E. Economic Feasibility

MetroPCS is a wireless telecommunications provider licensed by the Federal Communications Commission to provide service in areas of Connecticut, including but not limited to Hartford County. MetroPCS will/has entered into an agreement with Crown Castle for the purpose of locating its installation at the Facility so that it may provide wireless telecommunications service to this area of Hartford. Therefore, the shared use of this Facility is economically feasible.

F. Environmental Feasibility

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the City of Hartford will be decreased with the sharing of the single Facility versus the proliferation of new towers.
- The proposal will not increase the height of the Facility.
- There will be little or no increase in the visibility of the Facility with the addition of MetroPCS's communications facility
- There will be no impact on any wetlands or water resources as a result of MetroPCS's installation.
- There will be no increased impact on air quality because no air pollutants will be generated during the normal operation of the Facility.
- There will only be brief, slight increase in noise pollution while the antennas are attached and the equipment cabinets are installed.
- During construction, the proposed project will generate a small amount of traffic as workers arrive and depart and materials are delivered. Upon completion, traffic will be limited to an average of one monthly maintenance/inspection visit.

G. Public Safety Concerns/Benefits

There will be no adverse impact to the health and safety of the surrounding community or the workers at the Facility due to the addition of MetroPCS's installation at the Facility. MetroPCS has performed an analysis of the radio frequency fields emanating from its proposed installation to ensure compliance with the National Council on Radiation Protection and Measurements' ("NCRP") standard for maximum permissible exposure (MPE) adopted by the Federal Communications Commission ("FCC"). The analysis July 1, 2011, indicates that MetroPCS's antennas will emit 6.98% of the NCPR's standard

for maximum permissible exposure. A cumulative power density analysis indicates that together, all of the antennas on the Facility will emit 37.06% of the NCPR's standard for maximum permissible exposure. The power density analysis is attached. Therefore, the analysis demonstrates that the maximum level of radio-frequency energy emitted from the Facility will be well below the FCC's mandated radio frequency exposure limits.

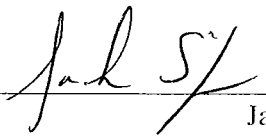
Moreover, MetroPCS expects to enhance safety in the City of Hartford area by improving wireless communications for local residents, businesses and travelers. MetroPCS is currently developing its wireless network in the State of Connecticut. In order to provide reliable coverage to residents, businesses and travelers in this area of Hartford and fulfill their coverage goals to comply with their FCC license, this site is a necessary part of MetroPCS's network development.

Specifically, this proposal is designed to provide reliable wireless service along I-91 and Route 5. The installation will also provide reliable service for surrounding commercial and residential areas.

Conclusion

For the reasons stated above, the attachment of MetroPCS's antenna facility to the Facility would meet all the requirements set forth in the Statute. This proposal is technically, legally, environmentally and economically feasible and meets all public safety concerns. Therefore, MetroPCS respectfully requests that the Council approve this request for the shared use of the Facility located at 4 Oliver Road in Hartford, Connecticut.

MetroPCS

By: 

Jackie Slaga
Tower Resource Management
30 Lyman Street, Suite 12
Westborough, MA 01581
Email: jackieslaga@gmail.com
Phone: (401) 855-0824
As Agent for MetroPCS

CC: Linda Roberts, Executive Director, Connecticut Siting Council
Town of Enfield, Attn: Matthew W. Coppler, Town Manager
Kate Rugman, MetroPCS
Michael Smyth, Bell Atlantic Mobile, PMB 353 4017 Washington, Canonsburg, PA 15317-225

Certificate of Service

This is to certify that on this 13 day of July, 2011, the foregoing Tower Sharing Proposal was sent, via first class mail, to the following:

Town of Enfield
Town Hall
820 Enfield Street
Enfield, CT 06082
Attn: Matthew W. Coppler, Town Manager

By: _____

Jackie Slaga

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: METROPCS MASSACHUSETTS, LLC

ATTN: MARK A. STACHIW
METROPCS MASSACHUSETTS, LLC
2250 LAKESIDE BOULEVARD
RICHARDSON, TX 75082

Call Sign	File Number
WQKF358	0004421015
Radio Service	
AW - AWS, 1710-1755/2110-2155 MHz bands	

FCC Registration Number (FRN): 0017970328

Grant Date	Effective Date	Expiration Date	Print Date
01-10-2009	12-06-2010	11-29-2021	02-16-2011

Market Number	Channel Block	Sub-Market Designator
BEA010	C	6

Market Name
New York-No. New Jer.-Long Isl

1st Build-Out Date	2nd Build-Out Date	3rd Build-Out Date	4th Build-Out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the1710–1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710–1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02–353, rel. April 20, 2006.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

CROWN CASTLE

3530 Toringdon Way,
Suite 300
Charlotte, NC 28277

Telephone: 704-405-6539
Fax: 724-416-6939

June 23, 2011

RE: Crown Castle Letter of Authorization (LOA)

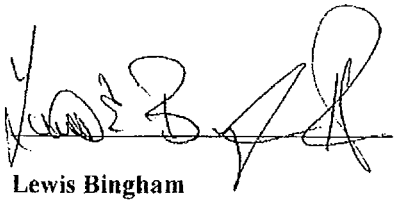
Crown Atlantic Company LLC ("Crown Castle"), does hereby authorize **Metro PCS** and its authorized contractors/agents to act as "Applicant" in the processing of all applications, permits, research and other related activities associated with the processing, planning, design review, permitting, entitlement and construction of additional equipment, antennas and site improvements for the Crown Castle existing wireless communications facility described as follows:

Customer Site Name:	**HFC1552A**	**Crown Castle Site ID Number:**	**806373**
Site Address:	**4 Oliver Rd Enfield, CT 06082**	**Crown Castle Site Name:**	**HRT 101 943232**

This authorization is fully contingent upon **Metro PCS's** authorized contractors/agents' compliance with the following conditions:

1. Crown Castle must review the application prior to submittal. Crown Castle must be provided all applications, narratives, drawings and attachments at least 72 hours in advance of their submittal to the locality. Use of email and electronic attachments is encouraged. A Crown Castle Zoning Subject Matter Expert (SME) will review and provide written comment to the customer within 48 hours of receipt of a complete set of application materials. If Crown Castle indicates that changes are required, submissions shall be altered in accordance with Crown Castle comments prior to submission to the locality. Verification of corrections should also be accomplished via emails and attachments.
2. In no event may **Metro PCS** encourage, suggest, participate in, or permit the imposition of any restrictions or additional obligations whatsoever on the tower site or Crown Castle's current or future use or ability to license space at the tower site as part of or in exchange for obtaining any approval, permit, exception or variance.
3. A copy of the final permit and/or a written summary of the zoning/entitlement decision rendered by the locality and any/all conditions placed on that decision shall be communicated in detail to Crown Castle well within the appeal period provided by the locality (typically 10-15 days).
4. All conditions of approval pertinent to the construction of the proposed project must be included in the construction drawings for the project. The conditions of approval pertinent to the construction of the project shall be copied verbatim from the zoning permit approval language, and shall be present in the drawings prior to submission for building permits and contractor bidding. Crown Castle shall verify the inclusion of appropriate conditions of approval in the construction drawing redline process.
5. Crown Castle will provide a Notice To Proceed (NTP) to construction to the customer upon receipt of the final approved zoning permit and the approved Building Permit.

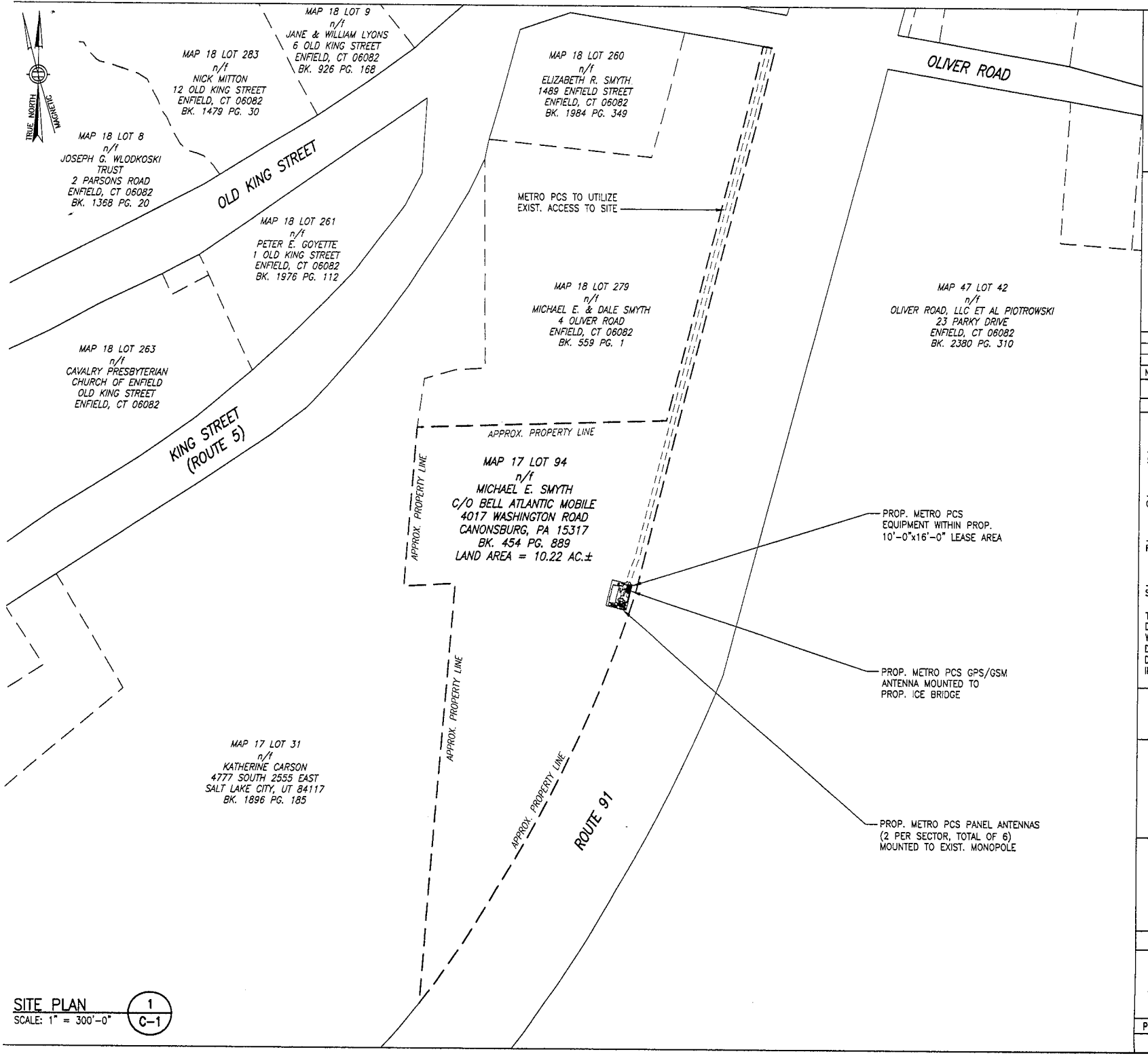
By Crown Castle

Signature: 

Printed Name: **Lewis Bingham**

Title: **Property Specialist**

Date: **June 23, 2011**



SITE PLAN (1 / C-1)
SCALE: 1" = 300'-0"

metroPCS
Unlimit Yourself.

285 BILLERICA ROAD
THIRD FLOOR
CHELMSFORD, MA 01824
TEL (978) 244-7200
FAX (978) 244-7240

CHAPPELL
ENGINEERING
ASSOCIATES, LLC
Civil · Structural · Land Surveyi

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 301
MARLBOROUGH, MA 01752
TEL (508) 481-7400
FAX (508) 481-7406

NO.	DATE	REVISIONS	BY	CHK
1	06/20/11	CONN. SITING COUNCIL PLAN REV.	CMC	JMT
0	06/14/11	CONN. SITING COUNCIL PLAN	CMC	JMT

NOT TO SCALE | DESIGNED BY: JMT | DRAWN BY: C

APPROVALS

SITE OWNER — DATE

CONSTRUCTION MANAGER — DATE

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 HERIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES OR MODIFICATIONS THEY MAY IMPOSE.

SITE ID
HFC1552A

SITE NAME
CROWN OLIVER ROAD
ENFIELD
(CROWN SITE #806373)

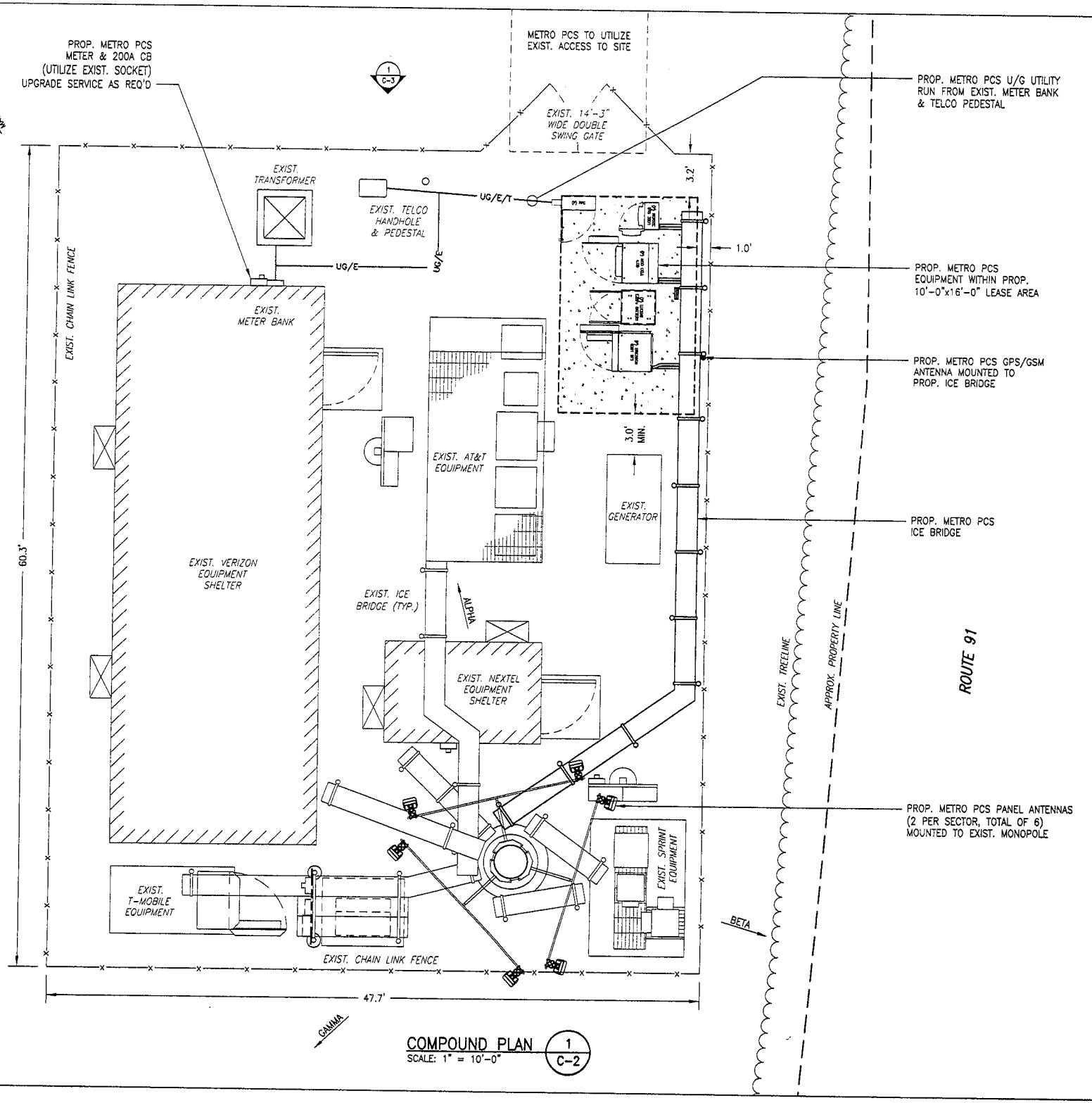
SITE ADDRESS
OLIVER ROAD
ENFIELD, CT
06082

METRO PCS LEASE AREA

EQUIPMENT: 10'-0"x16'-0"=160.

TOTAL: = 160.

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.
736.395	C-1	06/20/11	1 OF 4



COMPOUND PLAN (1 / C-2)
SCALE: 1" = 10'-0"

metroPCS
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285 BILLERICA ROAD
THIRD FLOOR
CHELMSFORD, MA 01824
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FAX (978) 244-7240

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NO.	DATE	REVISIONS	BY	CHK
1	06/20/11	CONN. SITING COUNCIL PLAN REV.	CMC	JMT
0	06/14/11	CONN. SITING COUNCIL PLAN	CMC	JMT

NOT TO SCALE | DESIGNED BY: JMT | DRAWN BY: CM

APPROVALS

SITE OWNER — DATE

CONSTRUCTION MANAGER — DATE

RF ENGINEER — DATE

SITE ACQUISITION — DATE

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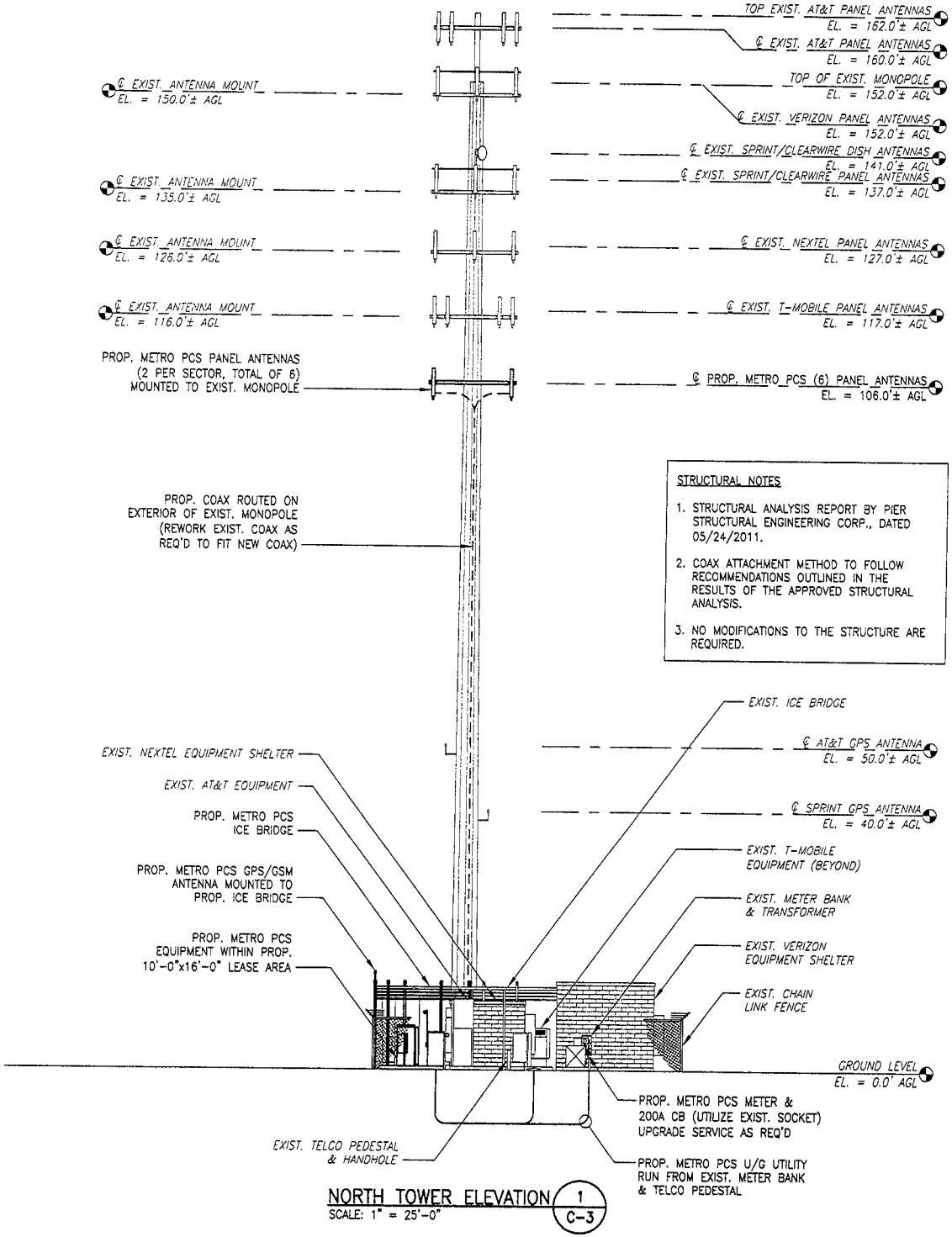
06082

METRO PCS LEASE AREA

EQUIPMENT: 10'-0"x16'-0"=160.0

TOTAL: = 160.0

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.
736.395	C-2	06/20/11	2 OF 4



NORTH TOWER ELEVATION (1 / C-3)
SCALE: 1" = 25'-0"

metroPCS
Unlimit Yourself.

285 BILLERICA ROAD
THIRD FLOOR
CHELMSFORD, MA 01824
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NO.	DATE	REVISIONS	BY	CH
1	06/20/11	CONN. SITING COUNCIL PLAN REV.	CMC	JM
0	06/14/11	CONN. SITING COUNCIL PLAN	CMC	JM

NOT TO SCALE | DESIGNED BY: JMT | DRAWN BY:

APPROVALS

SITE OWNER — DATE

CONSTRUCTION MANAGER — DATE

RF ENGINEER — DATE

SITE ACQUISITION — DATE

THE ABOVE PARTIES HEREBY APPROVE AND ACCEPT THES DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCE WITH THE CONSTRUCTION DESCRIBED HERIN. ALL CONSTRU DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUI DEPARTMENT AND ANY CHANGES OR MODIFICATIONS THEY IMPOSE.

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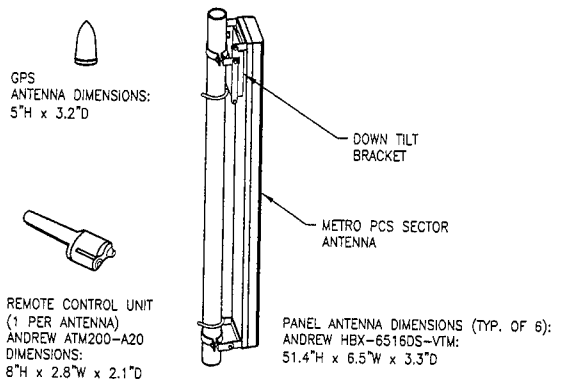
06082

METRO PCS LEASE AREA

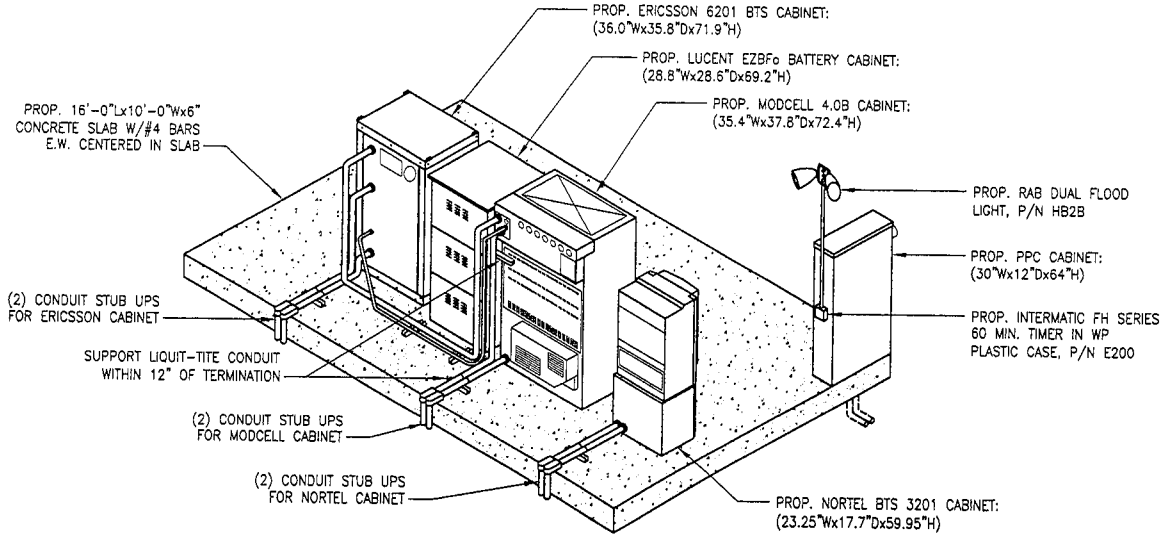
EQUIPMENT: 10'-0"x16'-0"=160.

TOTAL: = 160.

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.
736.395	C-3	06/20/11	3 OF 4



GPS & PANEL ANTENNA DETAIL — 1 / C-4
SCALE: NOT TO SCALE



EQUIPMENT DETAIL — 2 / C-4
SCALE: NOT TO SCALE

metroPCS
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0	06/14/11	CONN. SITING COUNCIL PLAN	CMC	JM

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APPROVALS

SITE OWNER — DATE

CONSTRUCTION MANAGER — DATE

RF ENGINEER — DATE

SITE ACQUISITION — DATE

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TOTAL: = 160.

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.
736.395	C-4	06/20/11	4 OF 4

Pier Structural Engineering Corp.
55 Northfield Drive E, Suite 198
Waterloo, ON N2K 3T6
Tel: 519-885-3806
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www.p-sec.ca

Specializing in Communication Tower Engineering

May 24, 2011

Veronica Harris, Tower Structural Analyst
Crown Castle USA Inc.
1200 McArthur Blvd
Mahwah, NJ 07430

Subject:	**Structural Analysis Report**	
Carrier Designation:	Carrier Co-Locate:	**Metro PCS**
	Carrier Site Number:	**HFC1552A**
	Carrier Site Name:	**Crown Oliver Road Enfield**
Crown Castle Designation:	Crown Castle BU Number:	**806373**
	Crown Castle Site Name:	**HRT 101 943232**
	Crown Castle JDE Job Number:	**157733**
	Crown Castle WO Number:	**409945**
Engineering Firm Designation:	P-SEC Project Number:	**4933**
Site Data:	**4 Oliver Road, ENFIELD, Hartford County, CT** **Latitude *41° 57' 36.2"*, Longitude *-72° 35' 32.3"*** **150-ft Monopole Tower**	

Dear Veronica Harris,

Pier Structural Engineering Corp. (P-SEC) is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 416330, in accordance with application 122963, revision 1.

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

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

The analysis has been performed in accordance with the TIA/EIA-222-F standard and Local Building Code Requirements based upon a wind speed of 80 mph fastest mile.

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

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

Respectfully submitted by:

Martin Piercey, P.E., P.Eng.
CT PE 25582

RISA Tower Report - version 5.4.2.0

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TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150-ft Monopole tower designed by VALMONT in November of 1991. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-E.

2) ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:		TIA/EIA-222-F standard and Local Building Code Requirements
County/State:		Hartford County, CT
Wind Speeds:	*CASE 1*	80.0 mph (fastest mile)
Wind Speeds:	*CASE 2*	28.1 mph (fastest mile) with 1" radial solid ice
Wind Speeds:	*CASE 3*	50.0 mph (fastest mile) for Serviceability
Allowable Stress:		Increased 1/3rd

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
106	106	6	andrew	HBX-6516DS-VTM	12 1	7/8 17/64	1
		6	andrew	ATM200-A20			
		3	--	T-Arms [TA 702-1]			

Notes:
1) Proposed equipment

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
152	160	6	powerwave tech	7770.00	12	1-5/8	1
		6	powerwave tech	LGP13519			
		6	powerwave tech	LGP21401			
		3	--	Side Arm Mount [SO 701-1]			
	152	1	--	10.5' x 4" Pipe Mount			
150	152	1	antel	BXA-185063/8CF			
		2	antel	BXA-185090/8CFx2			
		2	antel	BXA-70063/6CFx4			
		1	antel	BXA-70063/6CFx6			
		2	antel	LPA-80063/4CF			
		4	antel	LPA-80080/4CF			
		6	rfs celwave	FD9R6004/2C-3L			
	150	1	--	Platform Mount [LP 713-1]			
137	141	2	andrew	VHLP2.5-11	3 3 6 3	5/16 1/4 1-5/8 1/2	1
		2	dragonwave	HORIZON COMPACT			
		3	argus tech	LLPX310R-V1			
	137	6	decibel	DB980H90E-M			
		3	samsung	WIMAX DAP HEAD			
		1	--	Platform Mount [LP 713-1]			
	135	1	motorola	TIMING 2000			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
126	127	9	swedcom	ALP 9212-N	9	7/8	1
	126	3	--	T-Arms [TA 901-1]			
		--	--	--	12	1-1/4	2
116	117	3	ems wireless	DR65-18-02DPL2Q	6	1-5/8	1
		3	rfs celwave	APX16DWV-16DWV-S-E-ACU			
		6	andrew	ONEBASE TWIN DUAL DUPLEX TMA	6	1-1/4	
	116	3	--	Side Arm Mount [SO 701-1]			
50	50	1	symmetricom	58532A	1	1/2	3
		1	--	Side Arm Mount [SO 701-1]			
40	40	1	unknown	GPS	1	1/2	1
		1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing equipment
2) SLA equipment not controlling
3) Reserved equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
147	147	4	--	PD10017	--	--
140	140	12	--	PD1132	--	--

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Proj No. 07-07210G dated 7/26/2007	821582	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Valmont Proj No. 10614-91 dated 11/06/91	821581	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Valmont Proj No. 10614-91 dated 11/09/91	822743	CCISITES
APPLICATION	METRO PCS Revision #1 dated 05/12/2011	122963	CCISITES

3.1) Analysis Method

RISATower (version 5.4.2.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary) - LC1

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	150 - 97.1667	Pole	TP31.13x20.3x0.25	1	-9.62	1250.85	95.9	Pass
L2	97.1667 - 49.0833	Pole	TP40.49x29.6392x0.375	2	-19.31	2442.03	98.3	Pass
L3	49.0833 - 0	Pole	TP49.8x38.5268x0.438	3	-35.42	3619.24	99.6	Pass
							Summary	
						Pole (L3)	99.6	Pass
						RATING =	99.6	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC1

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
2	Anchor Rods	--	93.9	Pass
2	Base Plate	--	63.8	Pass
2	Base Foundation Soil	--	91.9	Pass
2	Base Foundation Rebar	--	61.8	Pass

Structure Rating (max from all components) =	99.6%

Notes:
1) See full member breakdown and section capacities in Appendix A.
2) See additional documentation in Appendix C for supporting calculations.
3) *Stresses up to 105% (steel) and 110% (foundations) are within engineering tolerance and considered acceptable.*

4.1) Recommendations

The existing 150-ft monopole located in Hartford County (HRT 101 943232), CT **is structurally acceptable** based on the TIA/EIA-222-F standard and Local Building Code Requirements based upon a wind speed of 80 mph fastest mile.

No modifications are required for the proposed loading.

encl.
806373-122963 SA Report-20110524.doc

RISATower Report - version 5.4.2.0

APPENDIX A

RISA TOWER OUTPUT

Power Density Calculations

Control Number	Site	Carrier	#Channels	ERP/Ch
EM-CING-049-071129	**Enfield - 4 Oliver Road**	**Cingular GSM**	**2**	**427**
EM-CING-049-071129	**Enfield - 4 Oliver Road**	**Cingular UMTS**	**1**	**500**
EM-VER-049-100114	**Enfield - 4 Oliver Road**	**Verizon**	**9**	**288**
EM-VER-049-100114	**Enfield - 4 Oliver Road**	**Verizon**	**3**	**436**
EM-VER-049-100114	**Enfield - 4 Oliver Road**	**Verizon**	**1**	**834**
EM-T-Mobile-049-090429	**Enfield - 4 Oliver Road**	**T-Mobile GSM**	**8**	**135**
EM-T-Mobile-049-090429	**Enfield - 4 Oliver Road**	**T-Mobile UMTS**	**2**	**760**
EM-Clearwire-049-100527	**Enfield - 4 Oliver Road**	**Clearwire**	**2**	**153**
EM-Clearwire-049-100527	**Enfield - 4 Oliver Road**	**Clearwire**	**1**	**211**
EM-AT&T-011-049-148-155-02070	Enfield - 4 Oliver Road	Sprint	11	132
EM-AT&T-011-049-148-155-02070	Enfield - 4 Oliver Road	Nextel	1	541.67
EM-AT&T-011-049-148-155-02070	Enfield - 4 Oliver Road	XM Sat Radio	1	292.72
EM-AT&T-011-049-148-155-02070	Enfield - 4 Oliver Road	Page Net	1	510.47
	Enfield - 4 Oliver Road	**metroPCS**	**3**	**727**

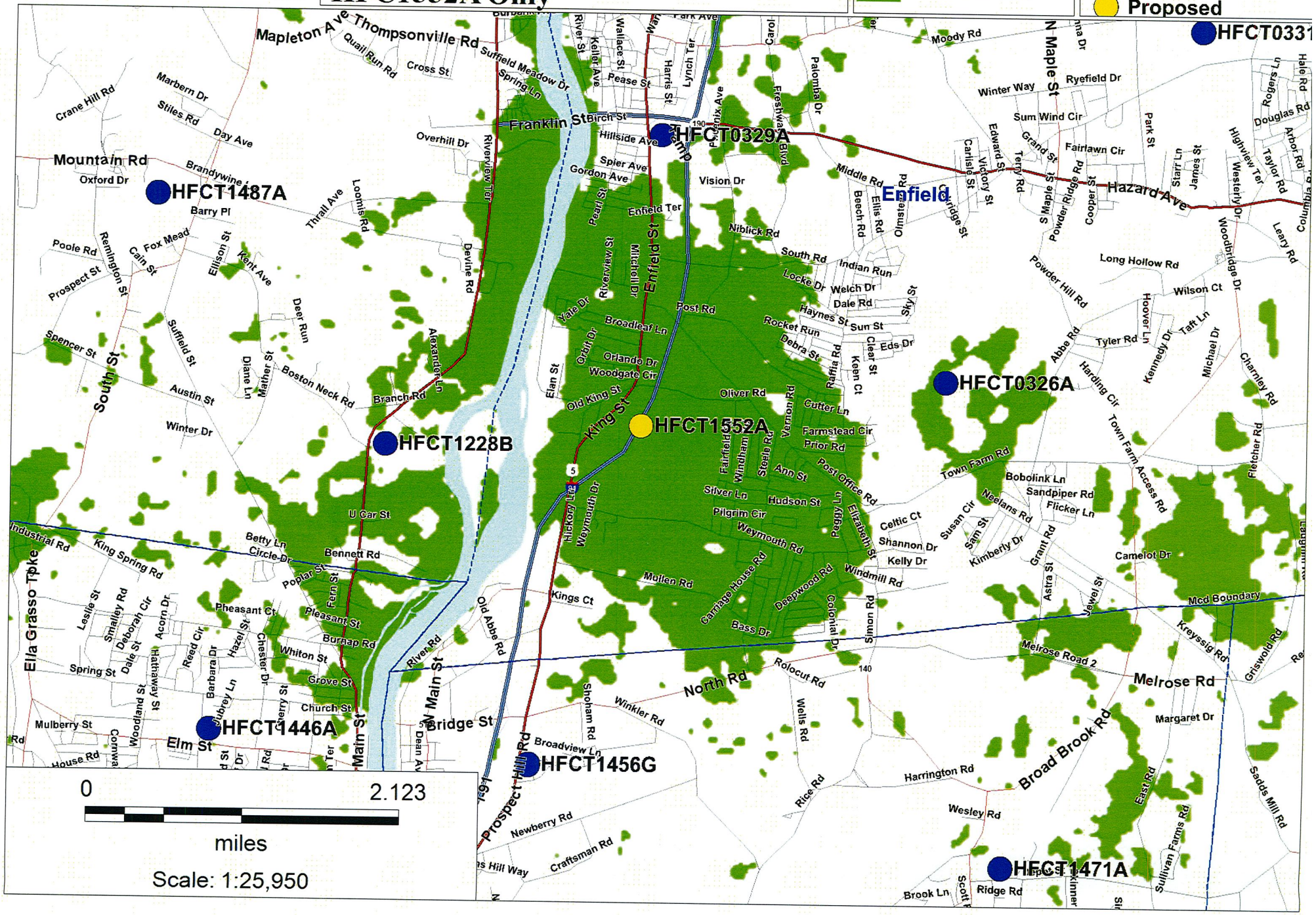
Ant Ht	Power Density (mW/cm2)	MHz	S	%MPE	Site Total
160	**0.0120**	**1900**	**1.0000**	**1.20%**	
160	**0.0070**	**880**	**0.5867**	**1.20%**	
152	**0.0403**	**869**	**0.5793**	**6.96%**	
152	**0.0204**	**1970**	**1.0000**	**2.04%**	
152	**0.0130**	**757**	**0.5047**	**2.57%**	
117	**0.0284**	**1945**	**1.0000**	**2.84%**	
117	**0.0399**	**2100**	**1.0000**	**3.99%**	
137	**0.0059**	**2496**	**1.0000**	**0.59%**	
139	**0.0039**	**11 GHz**	**1.0000**	**0.39%**	
140	0.0266	1900	1.0000	2.66%	
130	0.0115	851	0.5673	2.03%	
95	0.0117	2330	1.0000	1.17%	
110	0.0152	930	0.6200	2.45%	**30.08%**
106	**0.0698**	**2140**	**1.0000**	**6.98%**	**37.06%**

metroPCS

Enfield, CT
Coverage from Proposed Site
HFC1552A Only

Signal Strengh
-88 dbm

metroPCS Site Status
Existing On Air
Proposed



metroPCS

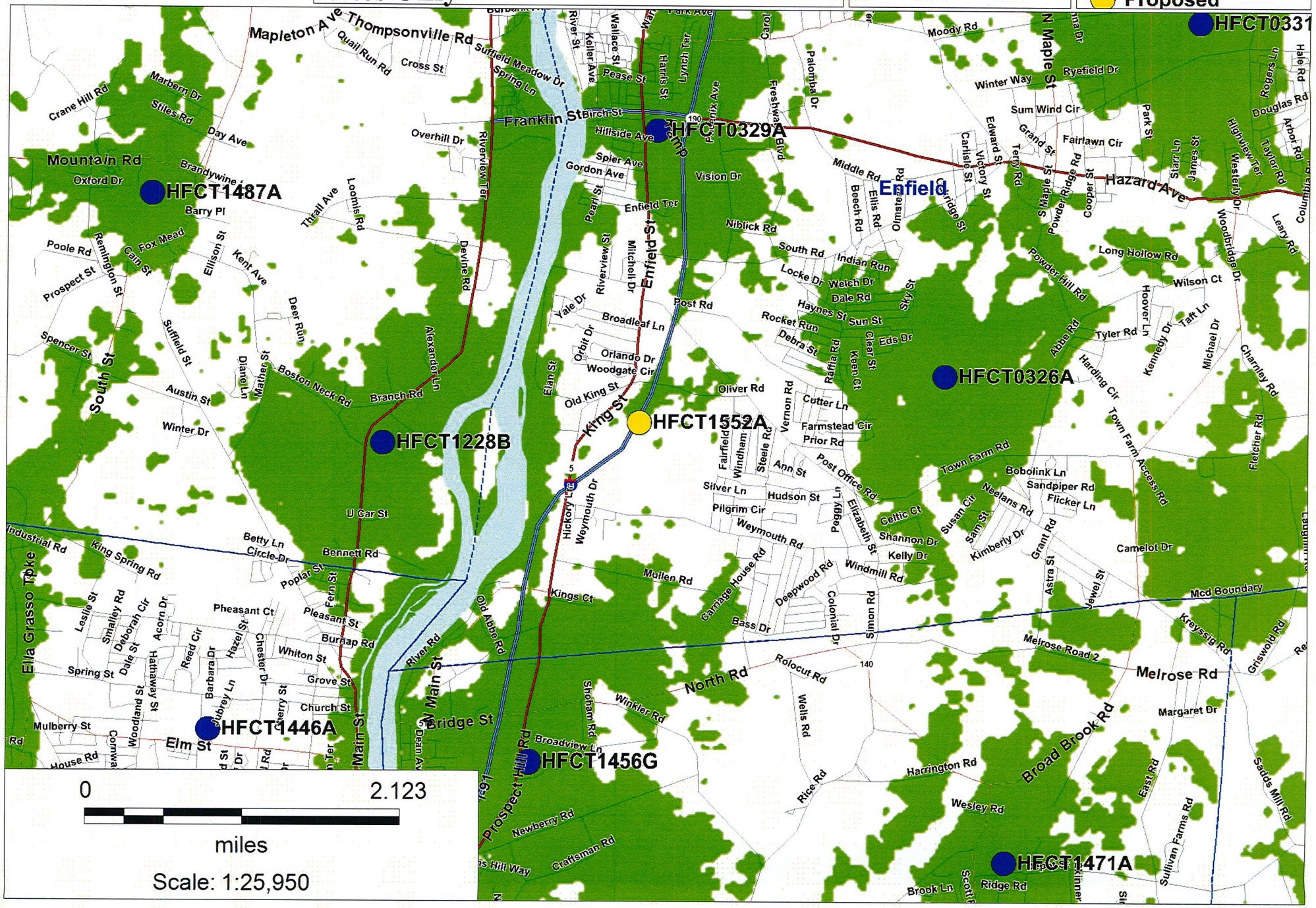
Enfield, CT
Coverage from Existing On-Air Sites Only

Signal Strengh

-88 dbm

metroPCS Site Status

- Existing On Air
- Proposed



metroPCS

Enfield, CT
Coverage from Existing On_Air + Proposed Sites HFC1552A

Signal Strengh

-88 dbm

metroPCS Site Status

- Existing On Air
- Proposed