

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE: :
: :
A PETITION OF CELLCO PARTNERSHIP : PETITION NO. _____
D/B/A VERIZON WIRELESS FOR A :
DECLARATORY RULING ON THE NEED TO :
OBTAIN A SITING COUNCIL CERTIFICATE :
FOR THE INSTALLATION OF A SMALL :
CELL TELECOMMUNICATIONS FACILITY :
3 ARNOLDALE ROAD, WEST HARTFORD, :
CONNECTICUT : FEBRUARY 25, 2015

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required under Section 16-50k(a) of the Connecticut General Statutes (“C.G.S.”) to install a new “small cell” telecommunications “unipole” tower on the roof of the building at 3 Arnoldale Road in West Hartford, Connecticut (the “Property”). The Property is owned by 755 Farmington Avenue WH LLC and managed by Benjamin Scholfield of Sovereign Management (collectively the “Owner”). Cellco identifies this proposed cell site as its West Hartford 8 SC Facility.

II. Factual Background

The Property is a 0.6 acre parcel at the southwest corner of Farmington Avenue and Arnoldale Road in West Hartford. The Property is located in West Hartford’s R-6 Residential

zone and is currently occupied by a five-story apartment building. The Property is surrounded by single family and multi-family residential uses. (See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph)). The building currently supports Sprint, Clearwire and Metro PCS antennas.

Cellco currently maintains twelve (12) cell sites within approximately two miles of the Property. These existing facilities provide Cellco with wireless service in easterly portions of West Hartford and westerly portions of Hartford. The West Hartford 8 SC Facility will provide capacity relief to each of these surrounding cell sites particularly Cellco’s West Hartford and West Hartford 4 cell site which are operating at their respective capacity limits.

III. Proposed West Hartford 8 SC Facility

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in West Hartford and throughout the State of Connecticut. Initially, the proposed West Hartford 8 SC Facility described above will provide wireless service in Cellco’s 2100 MHz (AWS) frequency range only. Coverage plots showing Cellco’s 2100 MHz service from the existing sites in the area today and the coverage footprint for the proposed West Hartford 8 SC Facility are included in Attachment 2.

The proposed West Hartford 8 SC Facility would consist of a single canister-type antenna (Model NH-360QS-DG-FOM) and a Remote Radio Head (“RRH”) (Model ALU RRH-2x60-AWS) located inside an approximately 18-inch diameter “unipole” tower in the southwesterly portion of the roof of the building. The unipole was designed and will be painted metallic gray to resemble an exhaust stack and will extend approximately twelve (12) feet above the existing parapet wall. Equipment associated with the small cell will be located inside a basement equipment room inside the building. Power and telephone service to the small cell equipment

will extend from existing service inside the building. (See Cellco's Project Plans included in Attachment 3). Project engineers have determined that the building is structurally capable of supporting the unipole tower and related equipment. A Structural Feasibility Letter and specifications for the small cell antenna and RRH that Cellco intends to install at this site are included in Attachment 4.

IV. Discussion

A. The Proposed Small Cell Facility Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the "Act"), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications facilities in the state to avoid "a significant impact on the environment and ecology of the State of Connecticut." C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and requires a Certificate of Environmental Compatibility and Public Need for the construction of telecommunication towers¹ "that may, as determined by the council, have a substantial adverse environmental effect". C.G.S. § 16-50k(a).

1. Physical Environmental Effects

Cellco respectfully submits that the installation of a single canister-type antenna and RRH concealed inside a unipole tower disguised as an exhaust stack and equipment located inside the basement of the building, will not involve a significant alteration in the physical and environmental characteristics of the Property. No ground disturbance of any kind is necessary or proposed as a part of this small cell facility installation.

¹ Pursuant to R.C.S.A. § 16-50j-2a(23), "tower" means a structure, whether free standing or attached to a building or other structure, that has a height greater than its diameter and is high relative to its surroundings.

2. Visual Effects

The installation of the unipole tower on the roof of the building at the Property would not be highly visible or have a significant impact on aesthetics in the area. The unipole tower would be designed and painted to resemble an exhaust stack and appear as an original building feature. As such, the small cell facility will have no adverse effects on existing views (*See Limited Visual Assessment and Photo-Simulations included in Attachment 5*).

3. State Historic Preservation Office Review

Due to the proximity of the Property to the West Hill National Register of Historic Places (“NRHP”) District, Cellco submitted plans for the West Hartford 8 SC Facility to the State Historic Preservation Officer (“SHPO”) for review and comment. After review, the SHPO determined that the proposed small cell installation would have “no adverse effect” on contributing resources in the West Hill Historic District or the building on the Property itself, a NRHP eligible structure. (*See Attachment 6, SHPO’s January 13, 2015 determination*).

4. FCC Compliance

Radio frequency (“RF”) emissions from the proposed Cellco installation, together with the existing carriers at this location, will be well within the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 7 is a Calculated Radio Frequency Emissions Report for the West Harford 8 SC Facility.

5. FAA Summary Report

Included in Attachment 8 is a Federal Airways & Airspace Summary Report verifying that the new unipole tower on the roof of the building at the Property would not constitute an obstruction or hazard to air navigation and that notification to the FAA is not required.

B. Notice to the Town, Property Owner and Abutting Landowners

On February 25, 2015, a copy of this Petition was sent to West Hartford's Mayor Scott Slifka, Town Planner, and Todd Dumais and the Owner. Because the Property is located within 2,500 feet of the Hartford – West Hartford boundary, a copy of the Petition was also sent to Mayor Pedro E. Segarra, of the City of Hartford. Included in Attachment 9 is a copy of the letters sent to Mayor Slifka, Mr. Dumais, Mayor Segarra and the Owner.

Notice of Cellco's intent to file this Petition was also sent to the owners of land that abuts the Property. A sample abutter's letter with attachments, and the list of those abutting landowners who were sent notice of the filing of the Petition is included in Attachment 10.

V. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a unipole tower disguised as an exhaust stack on the roof of the building at the Property to support a small cell antenna and RRH will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

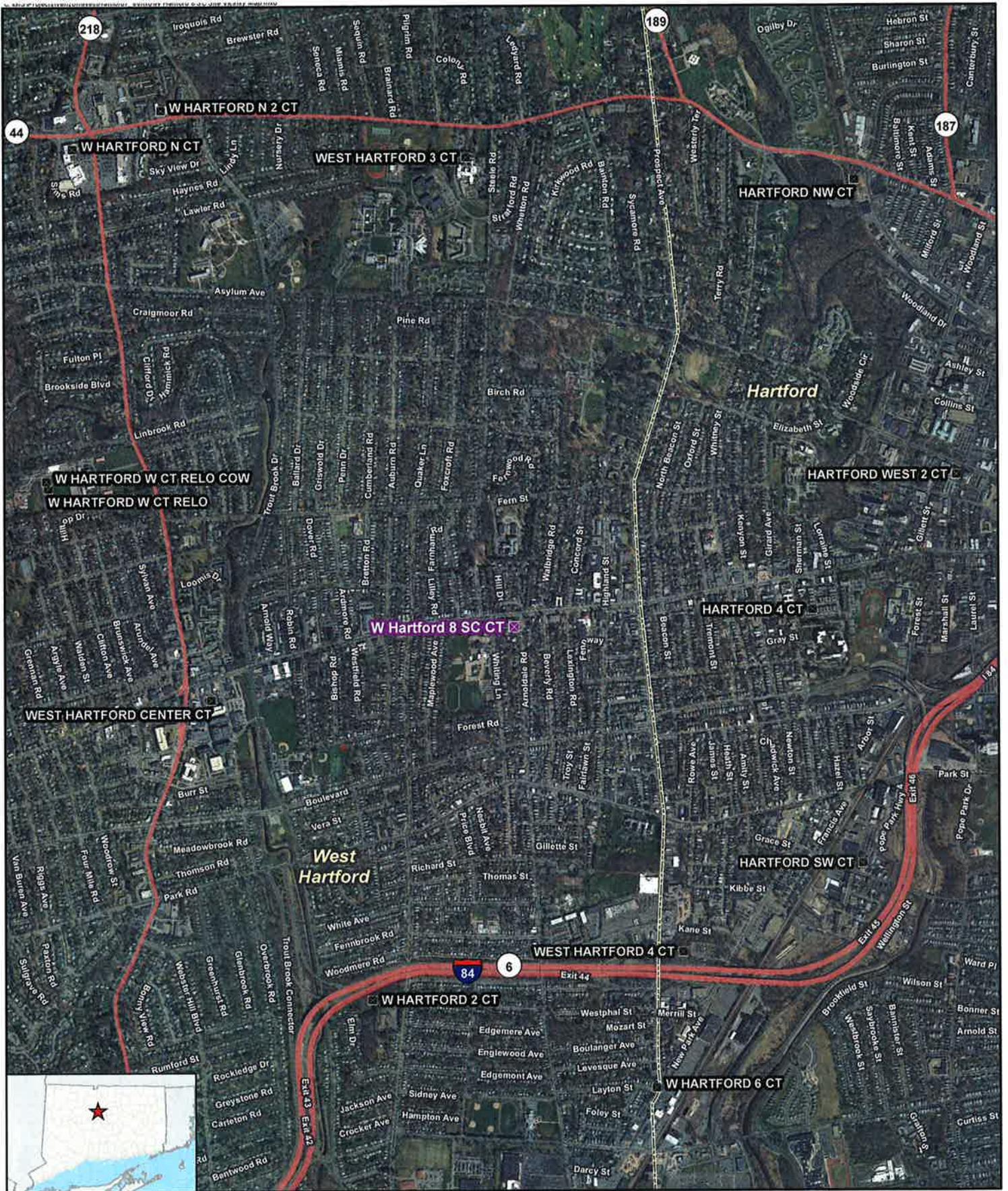
Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By 

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

ATTACHMENT 1

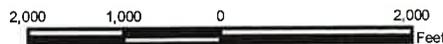


Legend

-  Proposed Verizon Wireless Small Cell Installation
-  Surrounding Verizon Wireless Facilities
-  Municipal Boundary

Site Vicinity Map

Proposed Small Cell Installation
 West Hartford SC 8 CT
 3 Arnoldale Road
 West Hartford, Connecticut





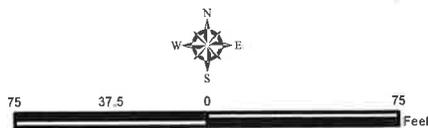
Legend

-  Host Property
-  Approximate Parcel Boundary (CTDEEP GIS)

Site Schematic

Proposed Small Cell Installation
 West Hartford SC 8 CT
 3 Arnold Road
 West Hartford, Connecticut

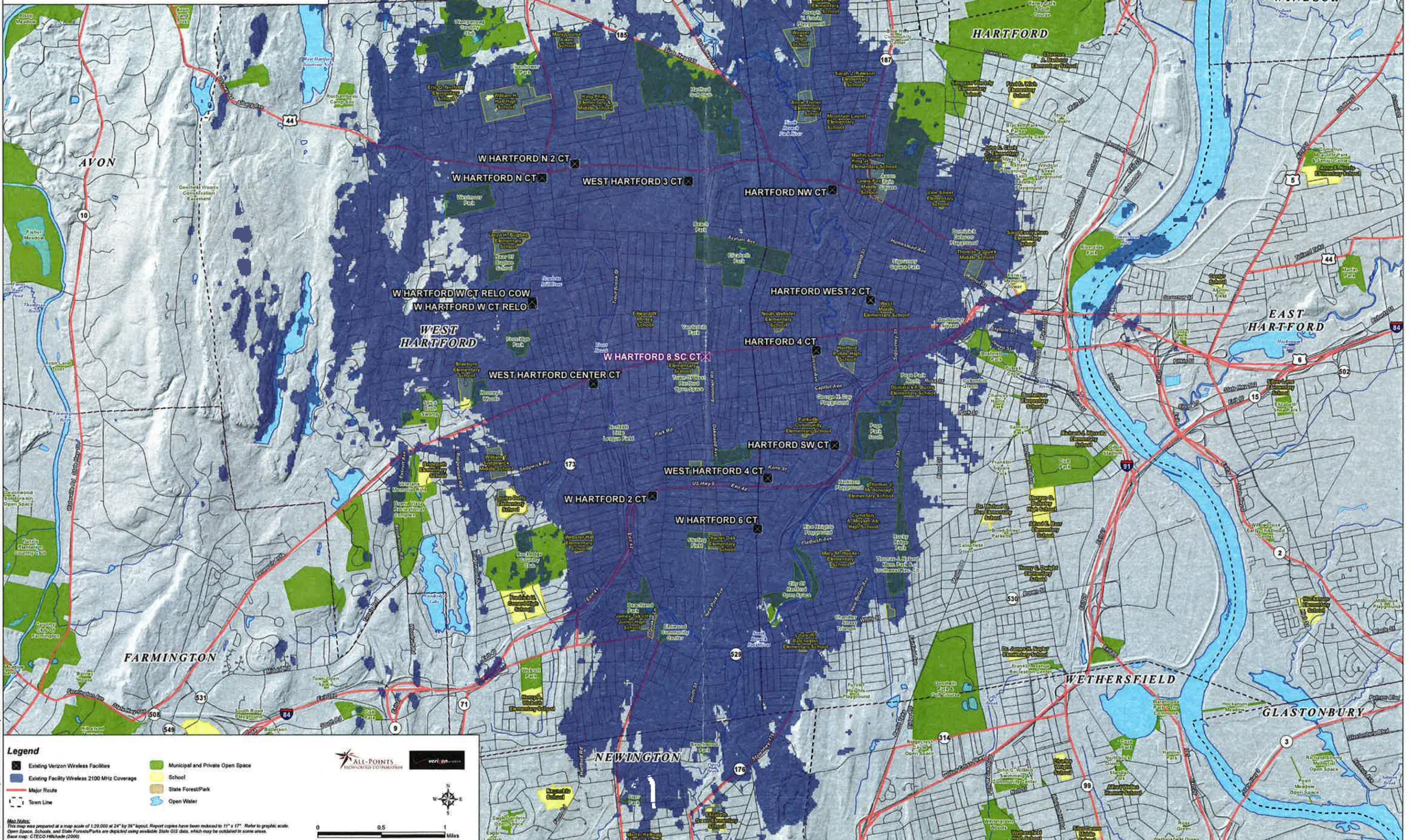
Map Notes:
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 75 feet
 Map Date: January 2015



ATTACHMENT 2

**Existing Verizon Wireless 2100 MHz Coverage
West Hartford, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



- Legend**
- Existing Verizon Wireless Facilities
 - Existing Facility Wireless 2100 MHz Coverage
 - Major Route
 - Town Line
 - Municipal and Private Open Space
 - School
 - State Forest/Park
 - Open Water

ALL-POINTS
ARCHITECTURE CORPORATION

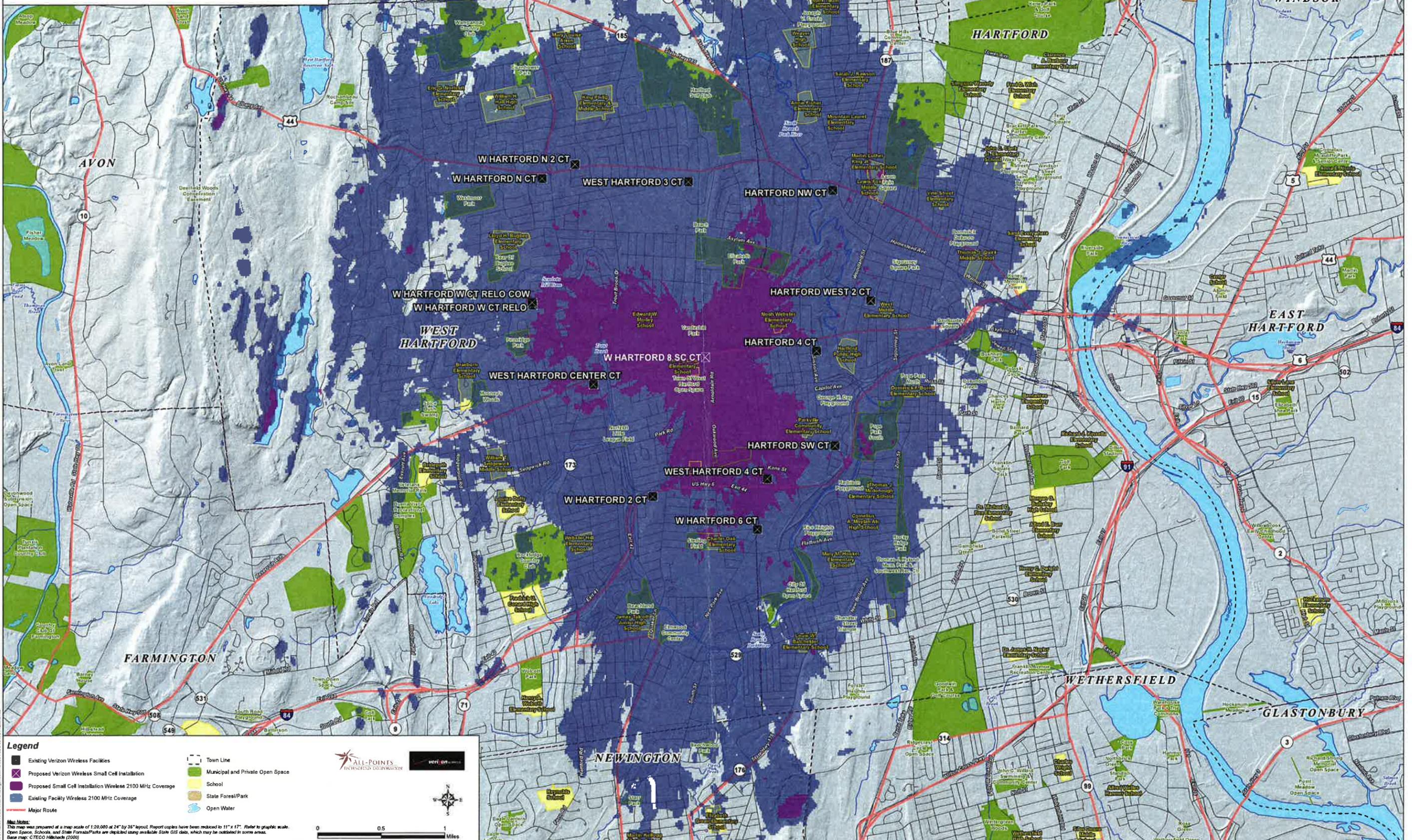
verizon

0 0.5 1 Miles

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2008)

**Proposed Verizon Wireless 2100 MHz Coverage
West Hartford, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



- Legend**
- Existing Verizon Wireless Facilities
 - Proposed Verizon Wireless Small Cell Installation
 - Proposed Small Cell Installation Wireless 2100 MHz Coverage
 - Existing Facility Wireless 2100 MHz Coverage
 - Major Route
 - Town Line
 - Municipal and Private Open Space
 - School
 - State Forest/Park
 - Open Water

Misc Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale. Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas. Base map: CTECO Hatched (2009)

ALL-POINTS
TECHNOLOGY CORPORATION

verizon

ATTACHMENT 3

Cellco Partnership

d.b.a. **verizon** wireless

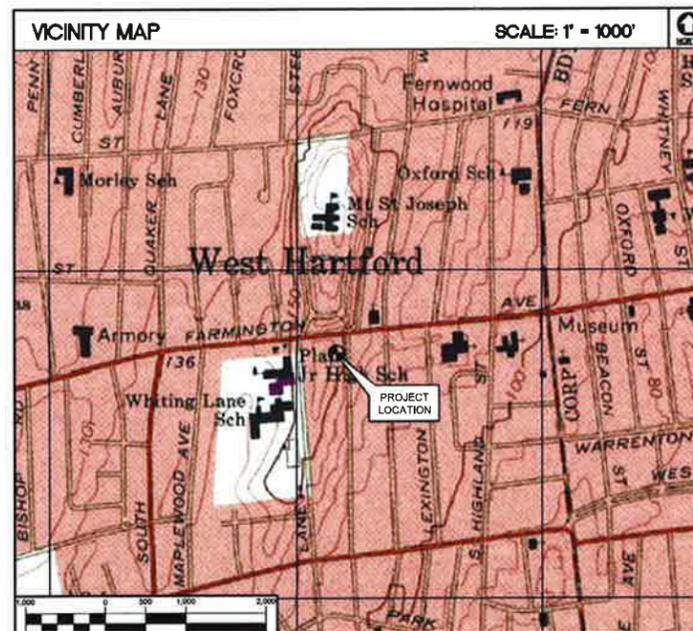
WIRELESS COMMUNICATIONS FACILITY

WEST HARTFORD 8 SC
3 ARNOLDALE ROAD
WEST HARTFORD, CT 06119

SITE DIRECTIONS		
FROM:	99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	TO: 3 ARNOLDALE ROAD WEST HARTFORD, CT 06119
1.	Head northeast on E River Dr toward Darlin St	0.3 mi
2.	Turn left to stay on E River Dr	354 ft
3.	Turn left at the 1st cross street onto Connecticut Blvd	0.2 mi
4.	Turn left onto the Route 84 W ramp to Hartford/Route 91	482 ft
5.	Merge onto I-84	2.1 mi
6.	Take exit 46 toward Sisson Ave	0.6 mi
7.	Turn right onto Sisson Ave	0.3 mi
8.	Turn left onto Farmington Ave	0.9 mi
9.	Turn left onto Arnoldale Rd	234 ft

GENERAL NOTES
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

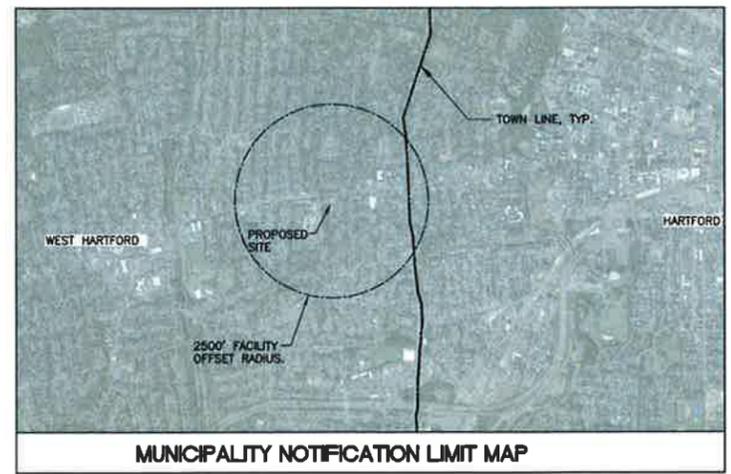
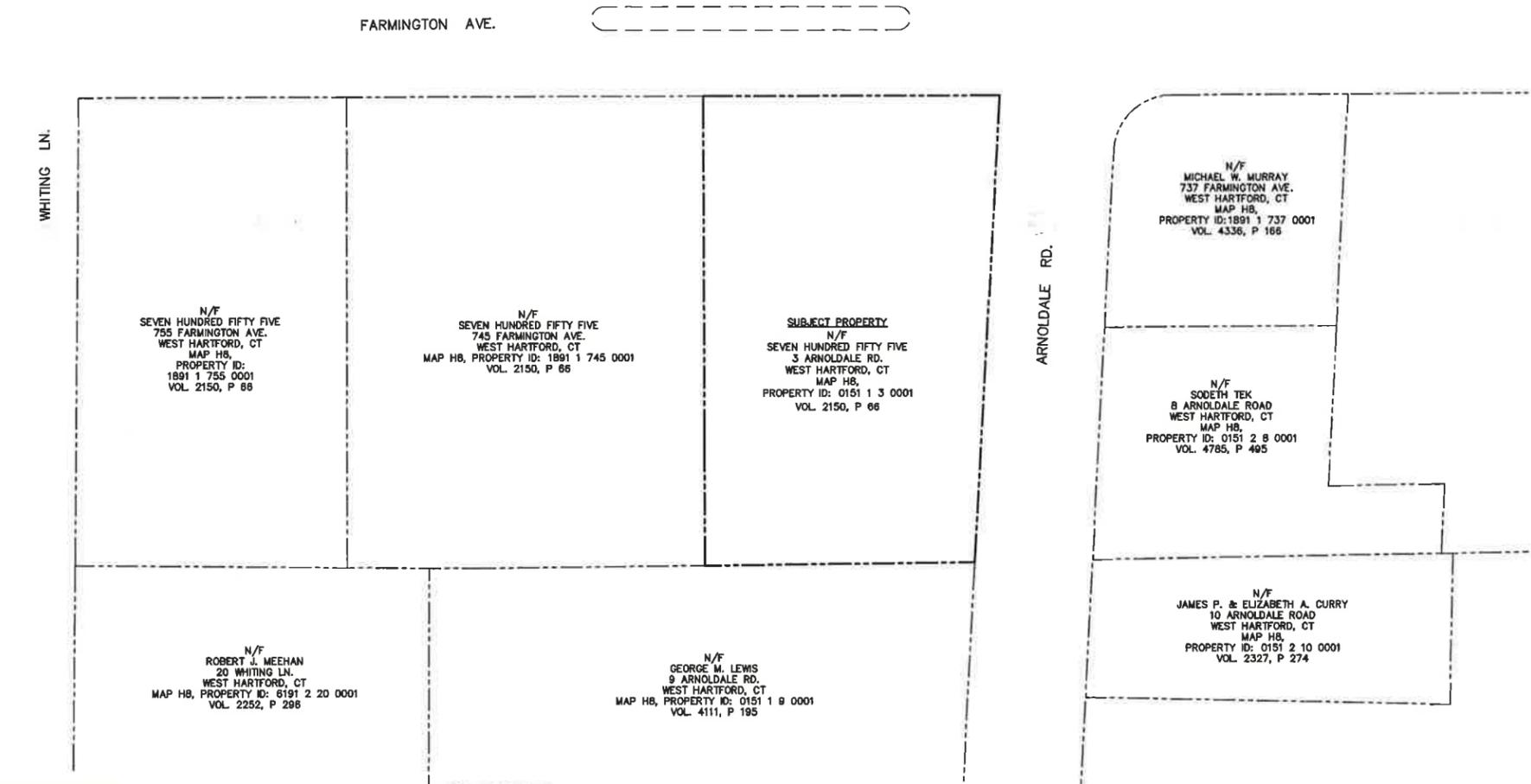
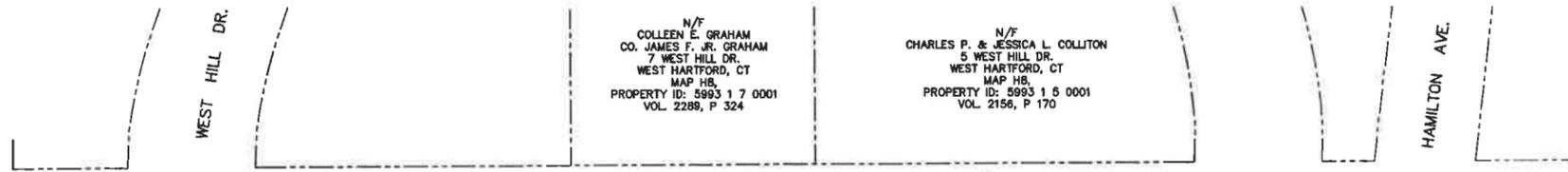
PROJECT SCOPE
1. THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE INSTALLATION OF A PROPOSED CELCO PARTNERSHIP EQUIPMENT CABINET LOCATED WITHIN AN 8'x8' LEASE AREA AT BASEMENT LEVEL.
2. A TOTAL OF ONE (1) OMNI ANTENNA, AND ASSOCIATED APPURTENANCES ARE PROPOSED TO BE MOUNTED WITHIN A PROPOSED CELCO PARTNERSHIP ANTENNA CONCEALMENT RF TRANSPARENT FAUX CHIMNEY WITH AN ANTENNA CENTERLINE ELEVATION AT ±73.0' A.G.L.
3. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED FROM DEMARCS LOCATED WITHIN OR ADJACENT TO THE EXISTING BUILDING TO THE PROPOSED CELCO PARTNERSHIP EQUIPMENT CABINET AT GRADE.
4. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.
5. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
6. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.



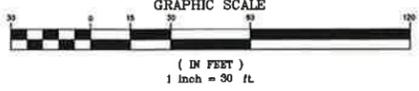
PROJECT SUMMARY	
SITE NAME:	WEST HARTFORD 8 SC
SITE ADDRESS:	3 ARNOLDALE ROAD WEST HARTFORD, CT 06619
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS
CONTACT PERSON:	SANDY CARTER CELCO PARTNERSHIP (860) 803-8219
SITE COORDINATES:	LATITUDE: 41°-45'-52.647" N LONGITUDE: 72°-43'-23.409" W GROUND ELEVATION: ±154.1' AMSL
COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 2-C SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED JANUARY 02, 2014, LAST REVISED DECEMBER 9, 2014	

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	ABUTTERS MAP	0
C-2	SITE / ROOF PLAN, ELEVATION AND ANTENNA CONFIGURATION	0

PROFESSIONAL ENGINEER SEAL	ISSUED FOR CSC-CLIENT REVIEW
DATE	02/19/15
REV.	0
DATE	02/19/15
DRAWN BY	CHK'D BY
DESCRIPTION	
 d.b.a. verizon wireless	
 CENTEK engineering 1322 Arnoldale Road West Hartford, CT 06119 www.CentekEng.com	
Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY WEST HARTFORD 8 SC 3 ARNOLDALE ROAD WEST HARTFORD, CT 06119	
DATE:	02/19/15
SCALE:	AS NOTED
JOB NO.	13231.001
TITLE SHEET	
T-1	
Sheet No. 1 of 3	



1
C-1
ABUTTERS MAP
SCALE: 1" = 30'



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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PROFESSIONAL ENGINEER SEAL

Cellco Partnership
d.b.a. Verizon Wireless

CENTEK engineering
Communication Solutions
1203 488-0580
1203 488-8887 Fax
652 North Main Road
Branford, CT 06460
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
WEST HARTFORD 8 SC
3 ARNOLDALD ROAD
WEST HARTFORD, CT 06119

DATE: 02/19/15
SCALE: AS NOTED
JOB NO. 13231.001

ABUTTERS
MAP

C-1
Sheet No. 2 of 3

PROPOSED CELCO PARTNERSHIP ANTENNA (TYP. OF 1) AND ASSOCIATED APPURTENANCES MOUNTED ATOP SUBJECT BUILDING ROOF. ANTENNA TO BE MOUNTED WITHIN RF TRANSPARENT SCREENING ENCLOSURE PAINTED METALLIC GRAY AS TO MIMIC THE APPEARANCE OF A SMOKE STACK. ANTENNA WILL NOT BE VISIBLE FROM OUTSIDE.

EXISTING SPRINT ANTENNAS, TYP.

EXISTING METRO-PCS FAUX CHIMNEY CONTAINING ANTENNAS.

TOP OF PROPOSED CELCO PARTNERSHIP RF TRANSPARENT SCREENING ENCLOSURE.
EL. ±74.7' A.G.L.
TOP OF PROPOSED CELCO PARTNERSHIP ANTENNA.
EL. ±74.2' A.G.L.

TOP OF EXISTING METRO-PCS FAUX CHIMNEY.
EL. ±76.0' A.G.L.

Q OF PROPOSED CELCO PARTNERSHIP ANTENNA.
EL. ±73.0' A.G.L.

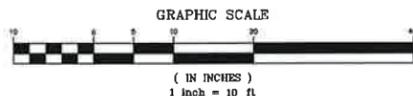
TOP OF EXISTING SPRINT ANTENNAS & TOP OF EXISTING PENTHOUSE.
EL. ±68.0' A.G.L.

TOP OF EXISTING PARAPET.
EL. ±65.2' A.G.L.

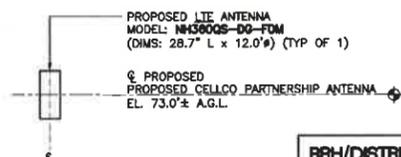
TOP OF EXISTING ROOF.
EL. ±61.3' A.G.L.



2 EAST ELEVATION
C-2 SCALE: 1" = 10'



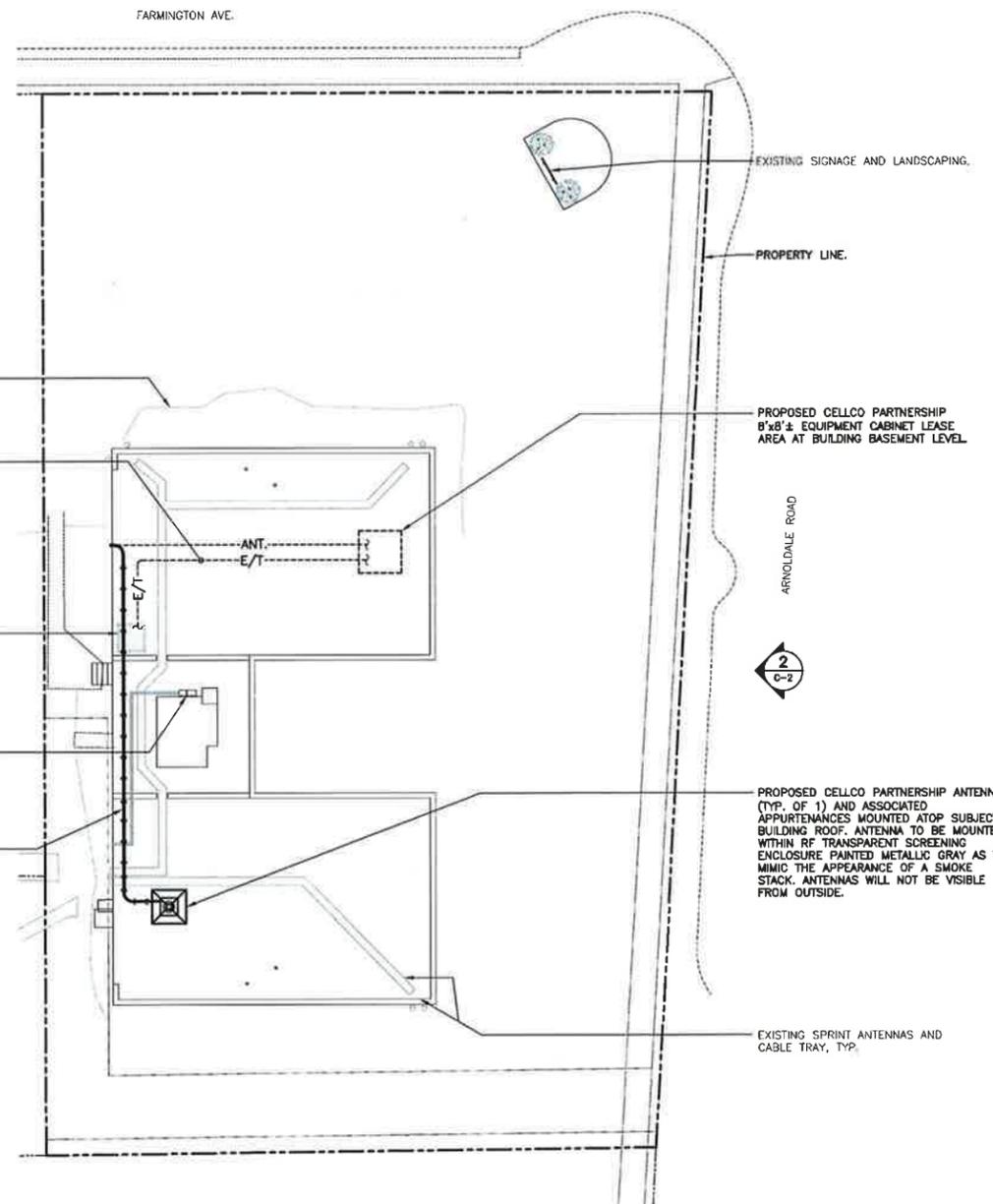
HEIGHTS SHOWN HEREIN REFERENCED FROM FAA 2-C SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED JANUARY 02, 2014, LAST REVISED DECEMBER 9, 2014



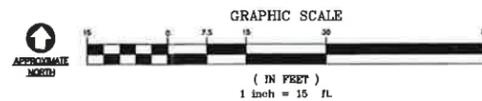
RRH/DISTRIBUTION BOX MOUNTING NOTE

* AWS RRH (MODEL: ALU RRH_2x80-AWS (DIMS: 36.7" L x 10.6" W x 5.8" D) (TYP. OF 1) MOUNTED TO PIPE MAST WITHIN ANTENNA CONCEALMENT SMOKE STACK.

3 TYP. ANTENNA MOUNTING CONFIGURATION
C-2 NOT TO SCALE



1 PARTIAL SITE/ROOF PLAN
C-2 SCALE: 1" = 15'



PROFESSIONAL ENGINEER SEAL	ISSUED FOR OSC-CLIENT REVIEW
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REV.	DATE
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100	02/19/15

PROFESSIONAL ENGINEER SEAL

Cellco Partnership
d/b/a Verizon Wireless

CEN TEK engineering
General Contractors

(203) 865-0580
(203) 865-8887 Fax
43-2 North Hartford Road
Hartford, CT 06105
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
WEST HARTFORD 8 SC
3 ARNOLDALE ROAD
WEST HARTFORD, CT 06119

DATE: 02/19/15
SCALE: AS NOTED
JOB NO. 13231.001

SITE / ROOF PLAN, ELEVATION AND ANTENNA CONFIGURATION

C-2
Sheet No. 3 of 3

ATTACHMENT 4

February 24, 2015

Mr. James Smith
Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

Re: Structural Feasibility Letter
Verizon Wireless Site West Hartford 8 SC
3 Arnoldale Road
West Hartford, Connecticut 06119

CEN TEK Project No. 13231.001

Dear Mr. Smith,

This letter is to confirm the structural feasibility of constructing the proposed wireless communications facility at the referenced property. No structural documentation of the existing building was available. A site visit by Centek personnel was conducted on 07/10/2014 and 07/31/2014 for the purpose of documenting existing structural member sizes and configurations. A preliminary structural analysis was prepared for use in making a final recommendation.

The host building is a combination of brick masonry, concrete and wood construction. At the roof level, two tiers of wood joists (spanning in the north/south direction) were observed above a concrete roof slab. Existing steel columns and girders and a raised wood framed platform were observed within the basement level at the location of the proposed equipment cabinet lease area. The basement space is currently being used as self-storage for the host building's occupants. Material properties of the existing structural could not be verified. Based on the age of the structure, conservative strength assumptions were made for the purpose of analyzing the superstructure.

The proposed antenna and associated appurtenances will be mounted within an antenna concealment enclosure that bears on the existing roof. Reinforcement framing will be introduced between the roof framing and the observed concrete slab below. The weight of the Verizon steel dunnage frame along with applicable wind, snow and occupant loadings will be transferred to the structural bearing of the host building through the proposed reinforcement framing.

Centek Engineering, Inc. will prepare sealed design documents for the proposed unmanned wireless communications facility located on the roof of the 5-story (\pm 68 ft.) host building. The final design will comply with the requirements of the 2005 Connecticut State Building Code with most current supplements. Should modifications to the existing structure be warranted to accommodate the proposed installation, it is our opinion that they could be implemented without

CEN TEK engineering, INC.
Structural Certification Letter
Verizon Wireless ~ West Hartford 8 SC
3 Arnoldale Road
West Hartford, Connecticut 06119

adverse effect to the existing facility operations. In conclusion, our preliminary analysis finds that the proposed Verizon Wireless facility will not adversely affect the structural integrity of the host building.

Respectfully Submitted by:

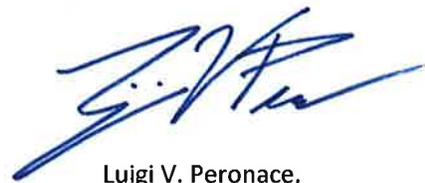


Carlo F. Centore, PE

Principal ~ Structural Engineer



Prepared by:



Luigi V. Peronace,

Structural Engineer

Metro Cell Antennas with Internal Diplexer and GPS Antenna

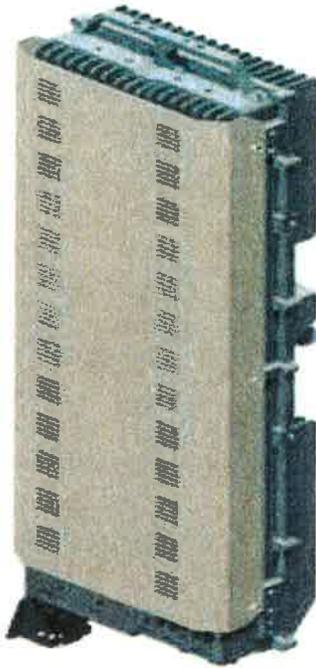
Dualband Quasi-Omni (360°), Metro Cell Antenna



ELECTRICAL SPECIFICATIONS										
	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
Operating Frequency Range	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
Frequency Bands, MHz	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170
Polarization	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°
Gain, dBi	4.3	5.3	8.0	8.1	8.5	1.3	2.3	4.0	4.2	4.5
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360	360	360	360
Beamwidth, Vertical, degrees	30.0	24.0	16.0	15.0	14.0	60.0	55.0	32.5	30.0	28.5
USIS, dB	12	12	14	13	13	-	-	14	12	11
Beam Tilt, degrees	0	0	0-16	0-16	0-16	0	0	0	0	0
Isolation, dB	25	25	25	25	25	25	25	25	25	25
VSWR (Return Loss, dB)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150
Input Power per Port, maximum, watts	250	250	250	250	250	250	250	250	250	250
MECHANICAL SPECIFICATIONS										
Connector Interface	7 - 16 DIN Female					7 - 16 DIN Female				
Connector Quantity, Location	2, Bottom					2, Bottom				
GPS Connector Interface	4.1/9.5 DIN female					4.1/9.5 DIN Female				
GPS Connector Quantity, Location	1, Bottom					1, Bottom				
Length, mm (inch)	730 (28.7)					360 (14.2)				
Outer Diameter, mm (inch)	305 (12.0)					305 (12.0)				
Wind Speed, maximum, km/h (mph)	241.4 (150)					241.4 (150)				
Net Weight, kg (lb)	20.0 (44.1)					12.0 (26.5)				
AVAILABILITY										
Expected Ready Date for Manufacturing	March 2014					June 2014				

ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart. The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals

along with operations, administration and maintenance (OA&M) information.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

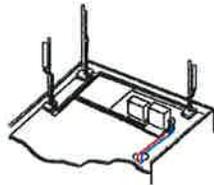
EASY INSTALLATION

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

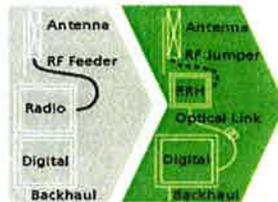
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

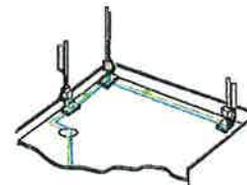
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

silent solutions, with minimum impact on the neighborhood, which ease the deployment

- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

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AT THE SPEED OF IDEAS™

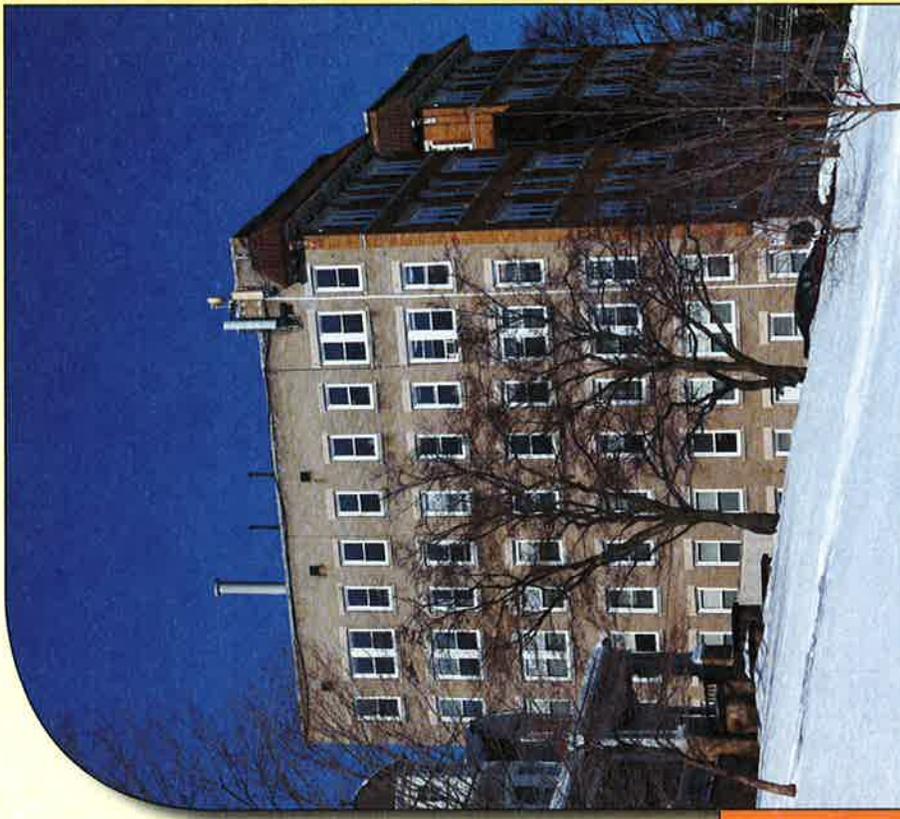
Alcatel-Lucent



ATTACHMENT 5

Limited Visual Assessment and Photo-Simulations

WEST HARTFORD 8
3 ARNOLDALE ROAD
WEST HARTFORD , CT



Prepared in January 2015 by:
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06141

Prepared for Verizon Wireless



LIMITED VISUAL ASSESSMENT & PHOTO-SIMULATIONS

At the request of Cellco partnership LLC d/b/a Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed a limited visual assessment and prepared computer-generated photo-simulations depicting the proposed installation of a small cell wireless telecommunications Facility at 3 Arnoldale Road in West Hartford, Connecticut (the "Property").

Project Setting

The Property is located south of Farmington Avenue in densely populated area in the eastern portion of the Town. The Property is currently developed with a six-story brick and masonry residential condominium building. The proposed Facility would include the installation of a single bi-directional antenna (concealed within an RF-transparent cylinder designed to resemble a small exhaust pipe or smokestack) mounted on the building's rooftop, such that it would extend approximately nine (9) feet above the top of an existing parapet (and about 12 feet above the building's rooftop). Associated equipment would be located within the first floor of the building.

Methodology

On December 2, 2014, APT personnel conducted field reconnaissance and photo-documented existing conditions. Three (3) nearby locations were selected to depict existing and proposed conditions. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with the lens set to 50 mm.

"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."¹

Three-dimensional computer models were developed for the building and proposed small cell components from AutoCAD information. Photographic simulations were then generated to portray scaled renderings of the proposed installation. Using field data, site plan information and image editing software, the proposed Facility was scaled to the correct location and height, relative to the existing structure and surrounding area. For presentation purposes in this report, all of the photographs were produced in an approximate 7-inch by 10.5-inch format². A photolog map and copies of the existing conditions and photo-simulations are attached.

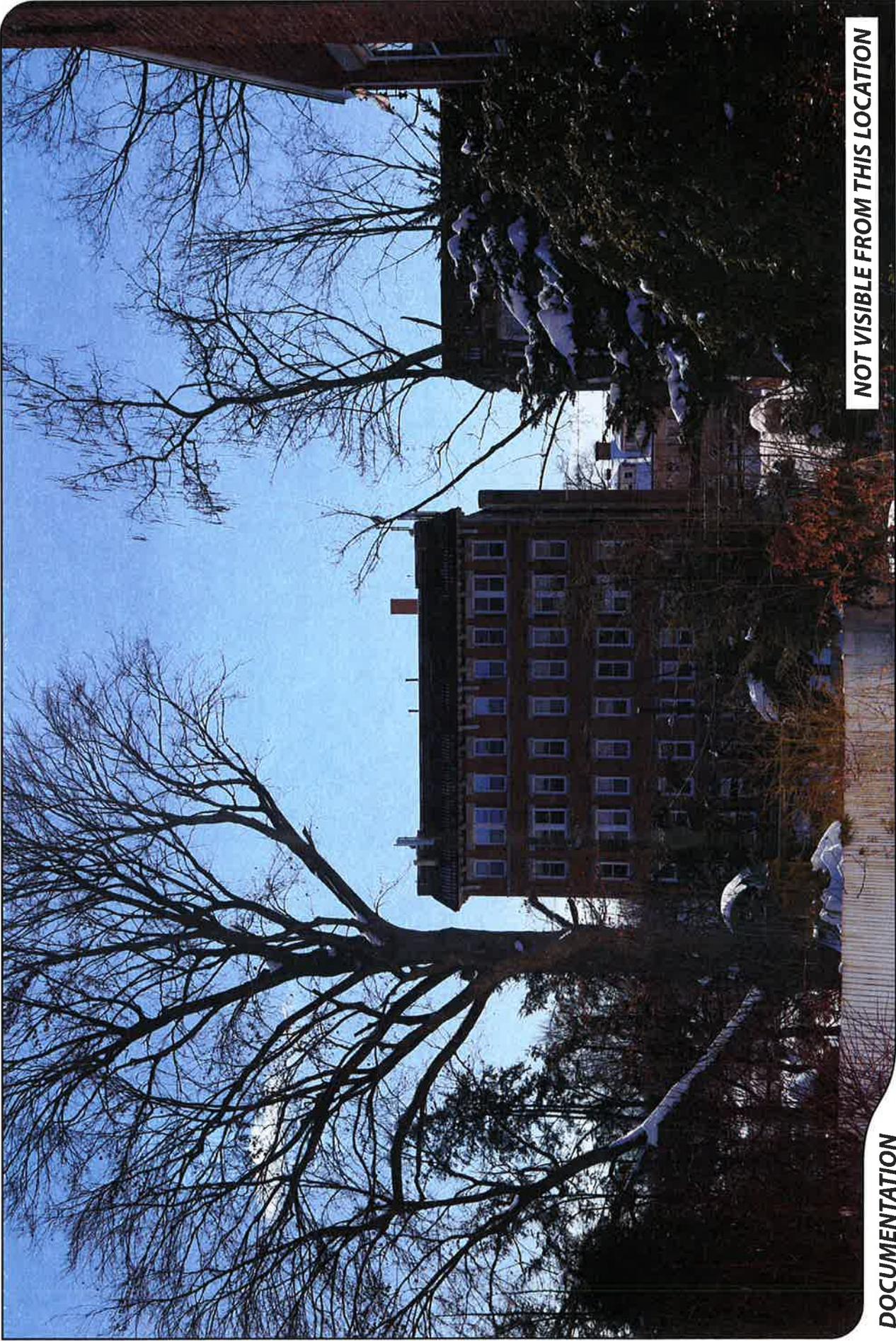
¹ Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

² When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph and depicting the subject in a way similar to what an observer might see, to the greatest extent possible.

Conclusions

The visibility of the proposed installation would be limited primarily to locations within a block of the Property to the south and east, in the immediate area where the south side of the building can be seen today. The proposed installation would not be visible from Farmington Avenue or areas to the north of the property. The small cell's concealment within a cylindrical faux exhaust pipe results in the facility appearing to be part of the building's heating system. Similar infrastructure exists on the building as does other wireless service providers antennas. Based on the results of this assessment, it is our opinion that the proposed installation of Verizon Wireless equipment at the Property would have little to no adverse effect on existing views.

ATTACHMENTS



DOCUMENTATION

PHOTO

1

LOCATION

WEST HILL DRIVE

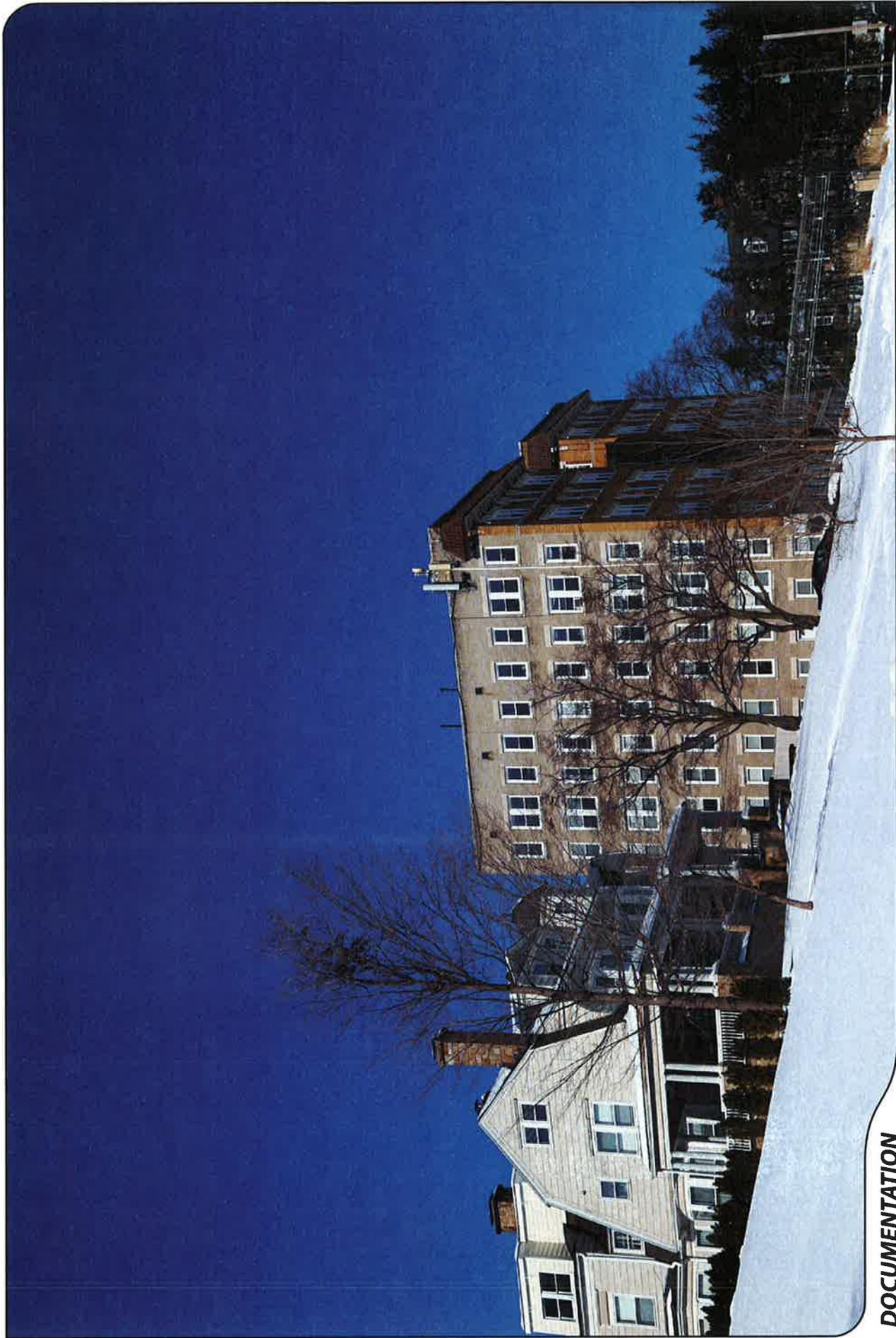
ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 315 FEET

NOT VISIBLE FROM THIS LOCATION



DOCUMENTATION

PHOTO

2

LOCATION

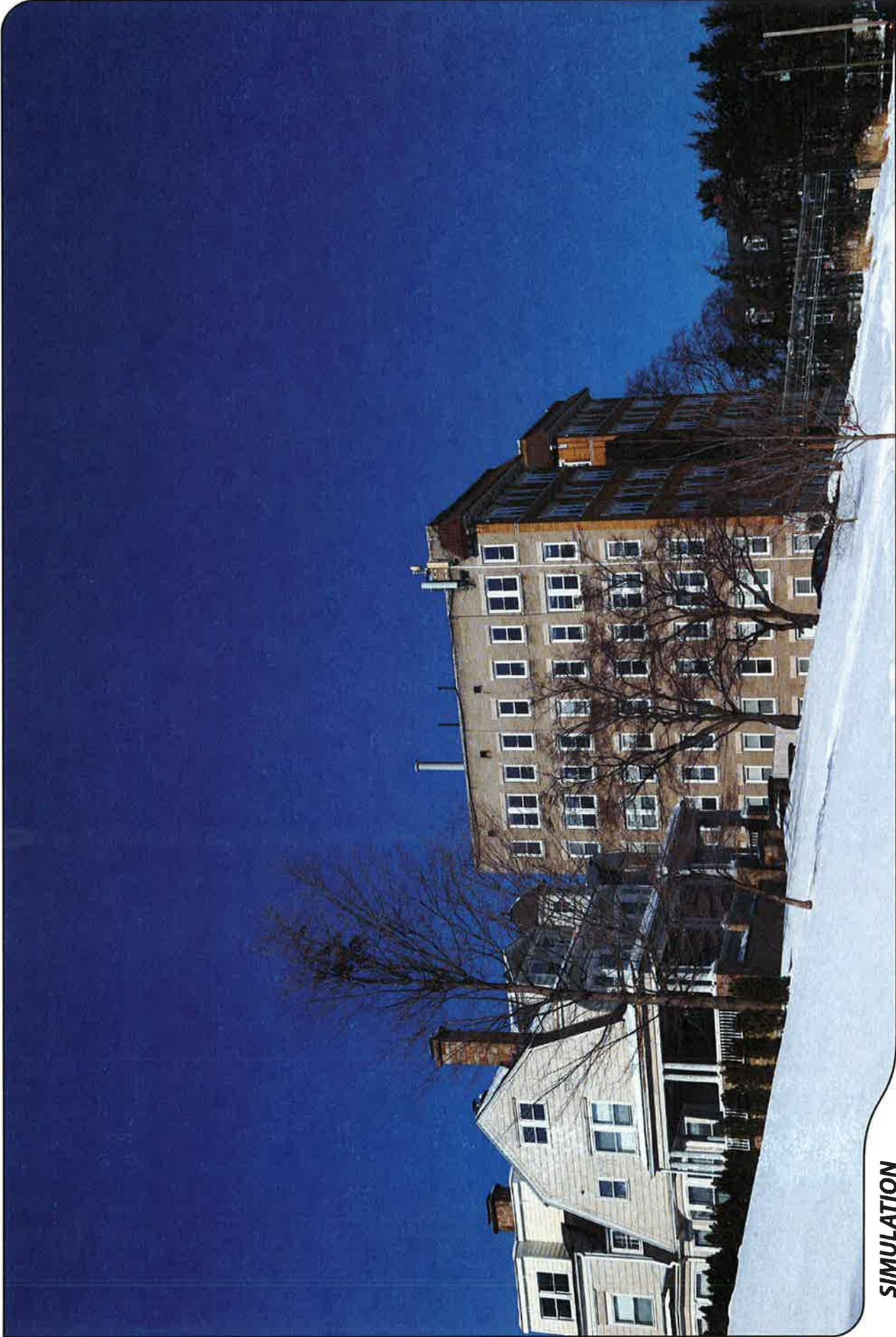
ARNOLDALE ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 280 FEET



SIMULATION

PHOTO

2

LOCATION

ARNOLDALE ROAD

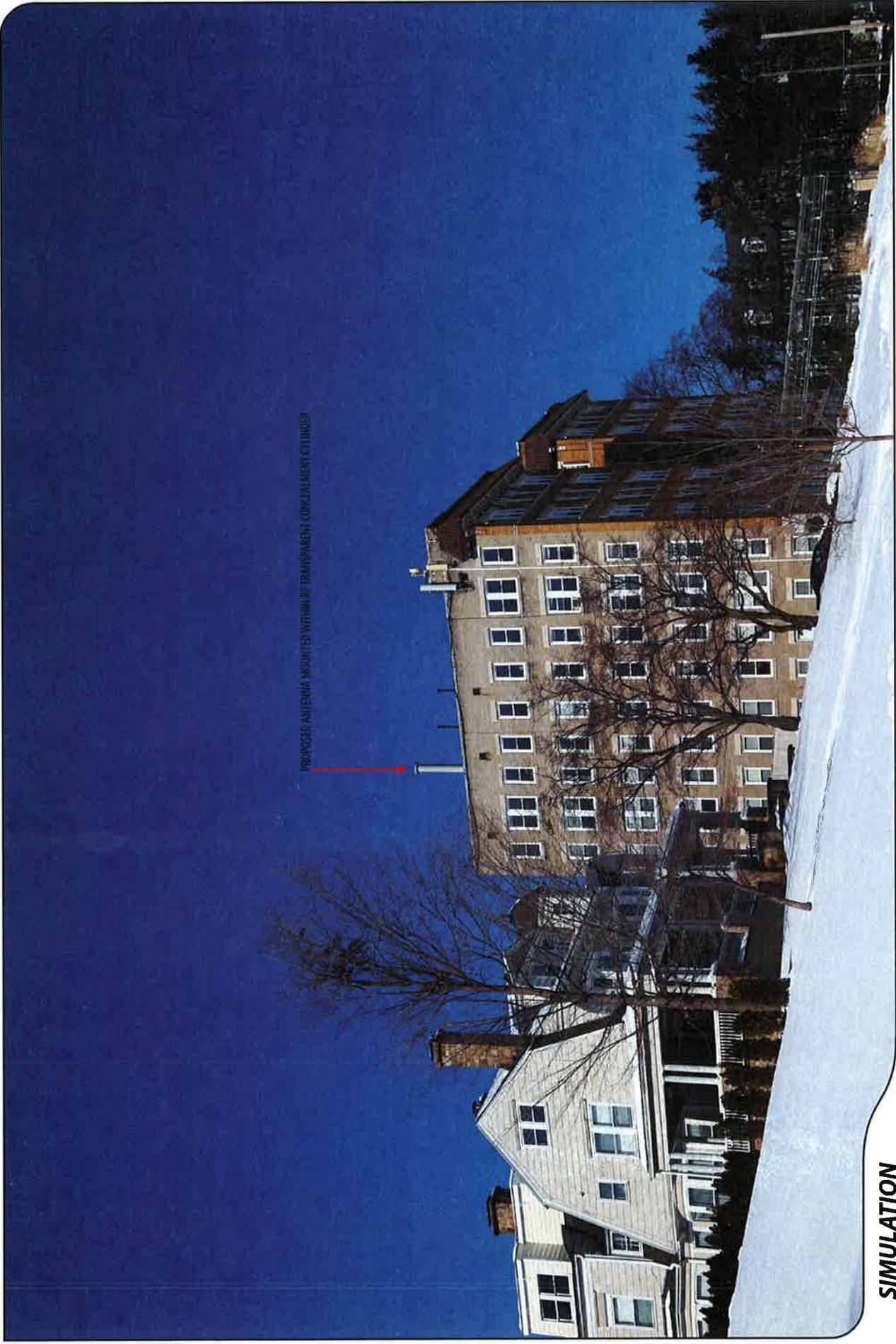
ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 280 FEET





PROPOSED ANTENNA MOUNTED WITHIN BE TRANSPARENT CONICALMENT CYLINDER

SIMULATION

PHOTO

2

LOCATION

ARNOLDALE ROAD

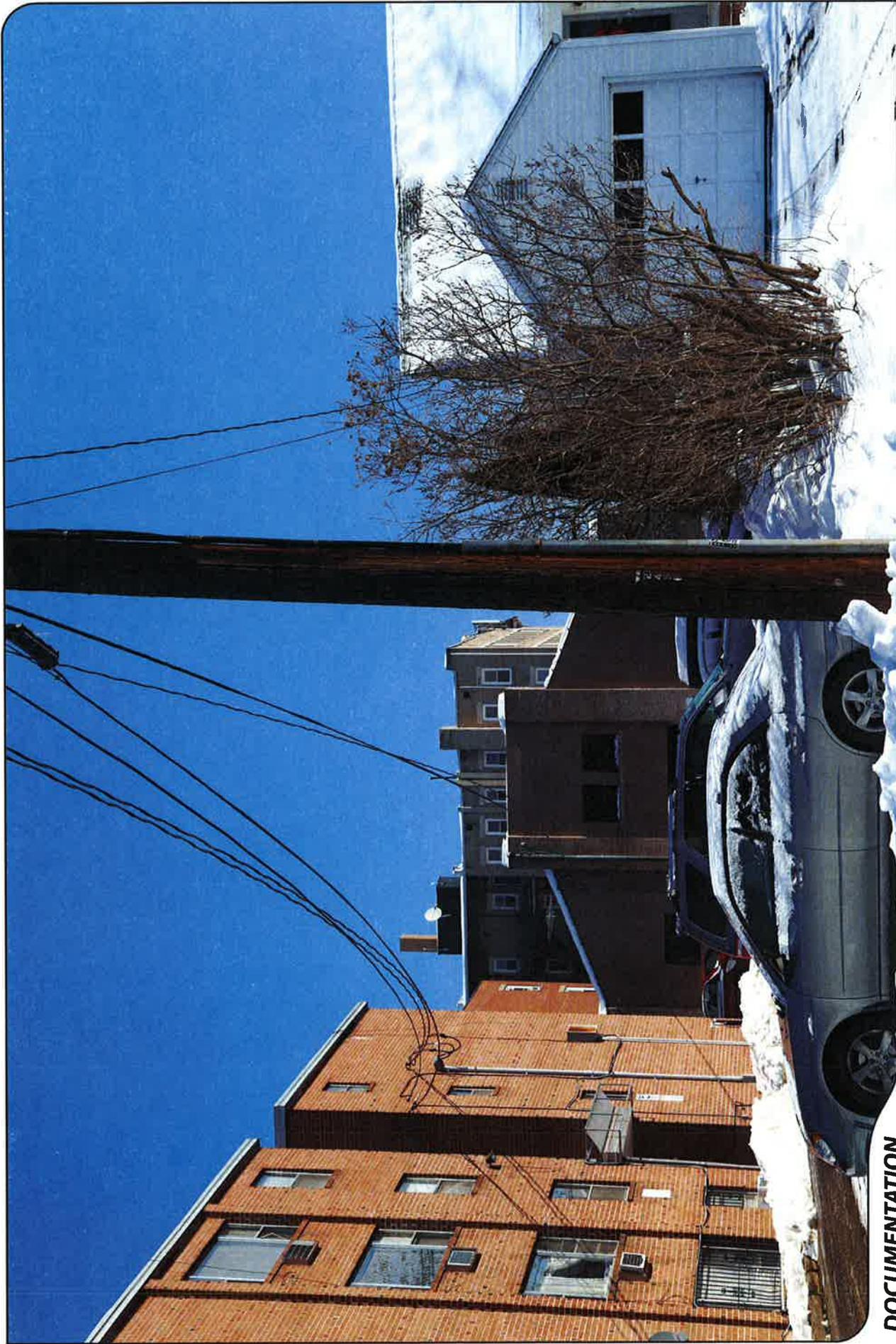
ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 280 FEET





DOCUMENTATION

PHOTO

3

LOCATION

WHITING LANE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 315 FEET



SIMULATION

PHOTO

3

LOCATION

WHITING LANE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 315 FEET



PROPOSED ANTENNA MOUNTED WITHIN RE TRANSPARENT CONCEALMENT CYLINDER

SIMULATION

PHOTO

3

LOCATION

WHITING LANE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 315 FEET

ATTACHMENT 6



Department of Economic and
Community Development

Connecticut
still revolutionary

January 13, 2015

Ms. Coreen Kelsey
Vanasse Hangen Brustlin, Inc
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

Subject: Proposed Telecommunications Collocation
3 Arnoldale Road
West Hartford, CT
Verizon Wireless

Dear Ms. Kelsey:

The State Historic Preservation Office is in receipt of the revised proposal for the above-referenced project, submitted for review and comment pursuant to the National Historic Preservation Act and in accordance with Federal Communications Commission regulations.

The SHPO concurs with VHB's determination that the proposed undertaking, which includes the addition of one antenna within a metallic grey RF transparent smoke stack on the rooftop of the subject building, will have no adverse effect on contributing resources in the West Hill National Register of Historic Places District located within the APE, or on the National Register of Historic Places eligible 3 Arnoldale Road, with the following conditions:

1. the facility owner (Verizon Wireless), at its expense, shall maintain the entire roof in good condition and in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* for as long as it is in use, and
2. if not in use for six consecutive months, the antennae, smoke stack and equipment shall be removed by the telecommunications facility owner. This removal shall occur within 90 days of the end of such six-month period. Upon removal, the property shall be restored by the facility owner to its historically appropriate appearance and materials.

The State Historic Preservation Office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the

State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | P: 860.256.2800 | Cultureandtourism.org

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Department of Economic and
Community Development

Connecticut
still revolutionary

Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act. For further information please contact Todd Levine, Environmental Reviewer, at (860) 256-2759 or todd.levine@ct.gov.

Sincerely,

A handwritten signature in cursive script that reads "Mary B. Duane".

Mary B. Duane
Deputy State Historic Preservation Officer

State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | P: 860.256.2800 | Cultureandtourism.org

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ATTACHMENT 7



C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report



West Hartford 8 CT

3 Arnoldale Road, West Hartford, CT 06119

February 2, 2015

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3. RF Exposure Prediction Methods	2
4. Calculation Results	3
5. Conclusion	4
6. Statement of Certification.....	4
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Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)	6
Attachment C: Verizon Wireless' Antenna Model Data Sheet and Electrical Pattern	8
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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the installation of a Verizon Wireless antenna on the rooftop of the building located at 3 Arnoldale Road in West Hartford, CT. The coordinates of the building are 41° 45' 52.81" N, 72° 43' 23.48" W.

Verizon Wireless is proposing the following:

- 1) Install one 2100MHz LTE omnidirectional antenna.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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 OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times \text{EIRP}}{4\pi \times R^2} \right) \times \text{OffBeamLoss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna patterns

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final site configuration.

4. Calculation Results

Table 1 below outlines the power density information for the site. Please note that there is no power density record for this particular site in the CSC database, and ERP values and transmitter counts listed for Sprint, Clearwire, and MetroPCS are based upon CSC filings for nearby sites in West Hartford.

The antenna models used by each carrier are based on a site visit conducted by C Squared Systems in January 2014. Due to the directional nature of these antennas, the majority of the RF power will be focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the building. Please refer to Attachments C, D, E & F for the vertical patterns of Verizon Wireless' proposed antenna, and all collocator antennas considered in this analysis. The calculated results shown in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antenna.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
Verizon LTE	73	2100	1	467	0.0032	1.0000	0.32%
Sprint CDMA/LTE	63.3	1900	4	347.5	0.0125	1.0000	1.25%
Sprint CDMA/LTE	63.3	850	1	195	0.0017	0.5667	0.31%
Clearwire	63.3	2496	2	153	0.0027	1.0000	0.27%
Clearwire	67.8	80000	1	776	0.0061	1.0000	0.61%
Clearwire	70.3	23000	2	78	0.0011	1.0000	0.11%
MetroPCS AWS	74.3	2135	3	727	0.0142	1.0000	1.42%
MetroPCS LTE	74.3	2130	1	1200	0.0078	1.0000	0.78%
Total:							5.07%

Table 1: Carrier Information¹

¹ Verizon Wireless antenna height is based on the Centek Engineering, Inc., Lease Exhibit, dated 11/12/2014. Antenna heights for Sprint, Clearwire and MetroPCS are based on measurements taken during a January 2014 site visit conducted by C Squared Systems.

5. Conclusion

The above analysis verifies that emissions from the final site configuration will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. The highest, cumulative expected percent of Maximum Permissible Exposure at ground level is **5.07% of the FCC Uncontrolled/General Population limit.**

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

February 2, 2015

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure²

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure³

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

² Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

³ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

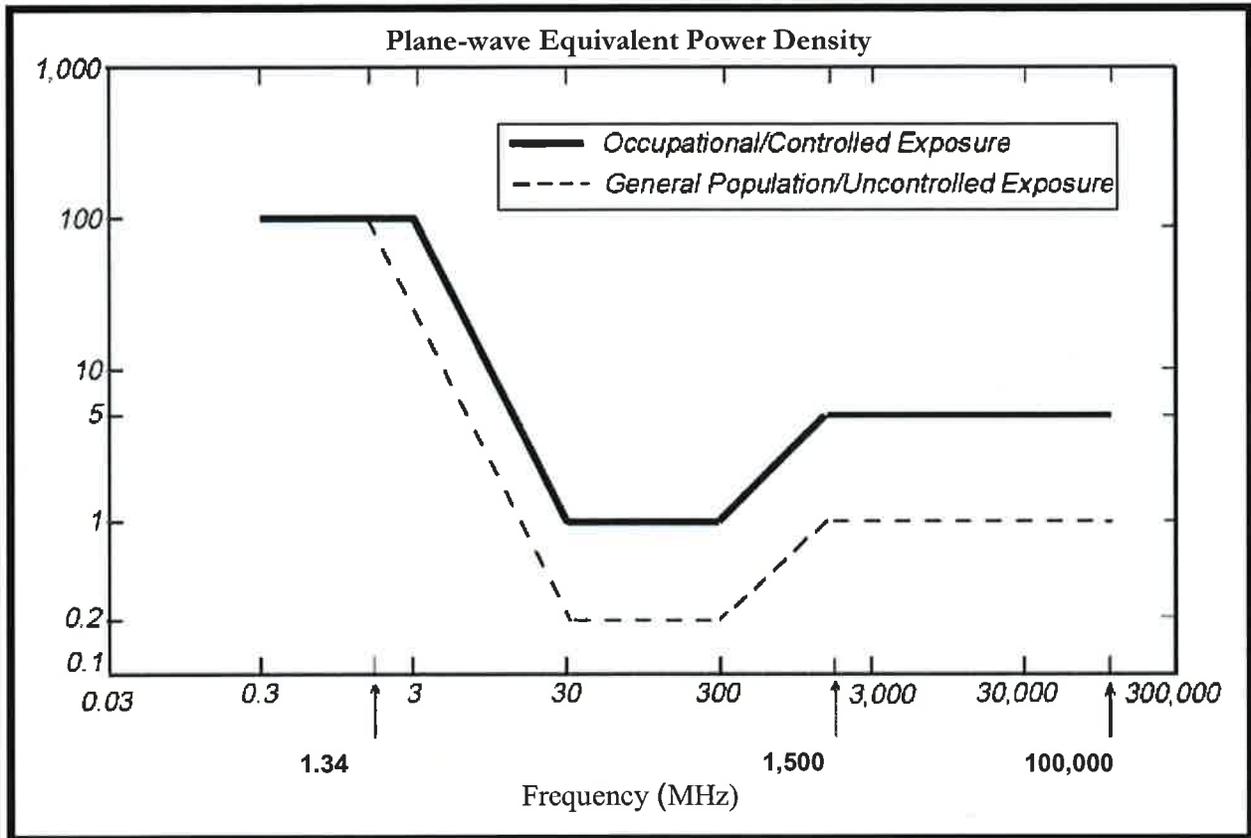
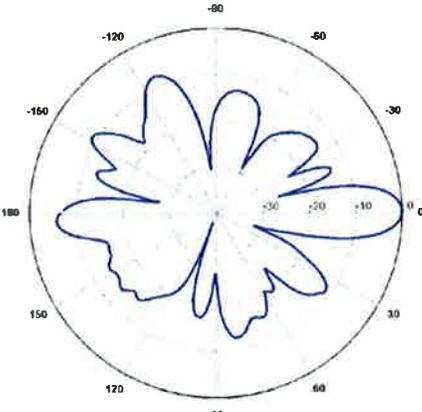
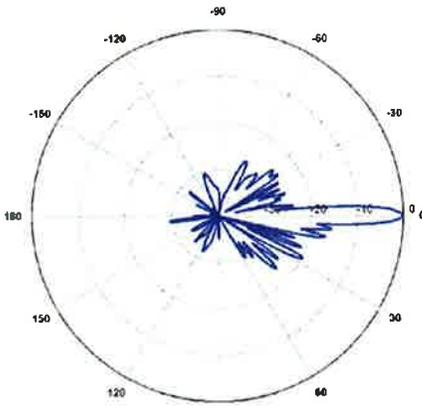


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

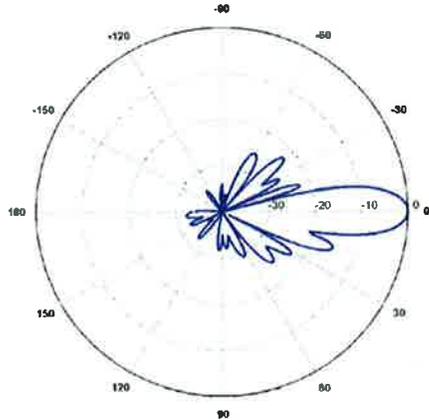
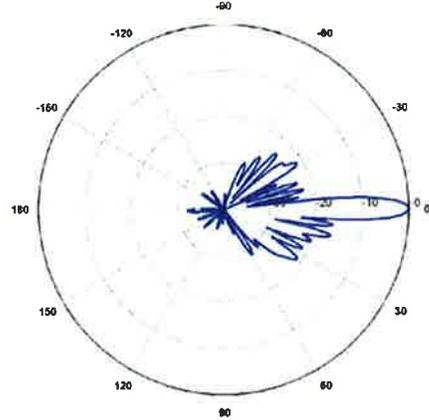
Attachment C: Verizon Wireless' Antenna Model Data Sheet and Electrical Pattern

<p>2100 MHz</p> <p>Manufacturer: Commscope Model #: NH360QS-DG-F0M Frequency Band: 1920-2170 MHz Gain: 5.9 dBd Vertical Beamwidth: 13.3° Horizontal Beamwidth: 360° Polarization: ±45° Size L x W: 28.7" x 12.0"</p>	
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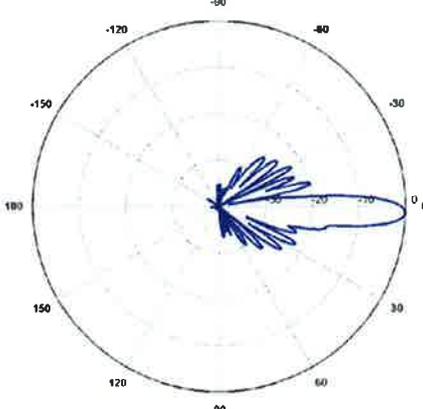
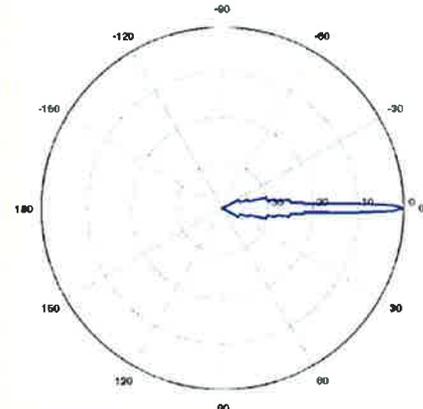
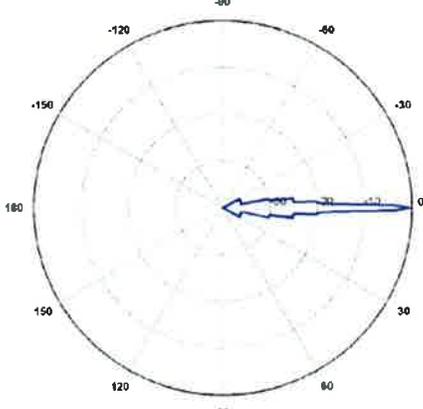
Attachment D: MetroPCS' Antenna Model Data Sheet and Electrical Pattern

<p>2100 MHz</p> <p>Manufacturer: RFS Model #: APXV18-206517S-C Frequency Band: 1710-2200 MHz Gain: 16.7 dBd Vertical Beamwidth: 5° Horizontal Beamwidth: 65° Polarization: Dual Pol ±45° Size L x W x D: 72.0" x 6.8" x 3.2"</p>	
--	---

Attachment E: Sprint's Model Data Sheets and Electrical Patterns

<p>850 MHz</p> <p>Manufacturer: RFS Model #: APXVSP18-C Frequency Band: 806-869 MHz Gain: 13.4 dBd Vertical Beamwidth: 11.5° Horizontal Beamwidth: 65° Polarization: Dual Pol ±45° Size L x W x D: 72.0" x 11.8" x 7.0"</p>	 <p>A polar plot showing the radiation pattern for the 850 MHz antenna. The plot is circular with concentric dashed lines representing gain levels (0, -10, -20, -30 dBd) and radial lines representing angles from 0 to 180 degrees. The main lobe is centered at 0 degrees and extends to approximately -10 dBd. There are several side lobes, with the largest ones between 90 and 180 degrees, reaching about -20 dBd.</p>
<p>1900 MHz</p> <p>Manufacturer: RFS Model #: APXVSP18-C Frequency Band: 1850-1995 MHz Gain: 15.9 dBd Vertical Beamwidth: 5.5° Horizontal Beamwidth: 65° Polarization: Dual Pol ±45° Size L x W x D: 72.0" x 11.8" x 7.0"</p>	 <p>A polar plot showing the radiation pattern for the 1900 MHz antenna. The plot is circular with concentric dashed lines representing gain levels (0, -10, -20, -30 dBd) and radial lines representing angles from 0 to 180 degrees. The main lobe is centered at 0 degrees and extends to approximately -10 dBd. There are several side lobes, with the largest ones between 90 and 180 degrees, reaching about -20 dBd.</p>

Attachment F: Clearwire's Model Data Sheets and Electrical Patterns

<p>2496 MHz</p> <p>Manufacturer: Commscope Model #: LLPX310R Frequency Band: 2300-2700 MHz Gain: 15.7 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 65° Polarization: Dual Slant ±45° Size L x W x D: 42.1" x 11.8" x 4.5"</p>	
<p>23000 MHz</p> <p>Manufacturer: Commscope Model #: VHLP2-23 Frequency Band: 21200-23600 MHz Gain: 38.4 dBd Vertical Beamwidth: 1.7° Horizontal Beamwidth: 1.7° Polarization: Single Diameter: 27.8"</p>	
<p>80000 MHz</p> <p>Manufacturer: Bridgewave Model #: AR80X Frequency Band: 72500-82500 MHz Gain: 48.9 dBd Vertical Beamwidth: 0.4° Horizontal Beamwidth: 0.4° Polarization: Linear Diameter: 24.0"</p>	

ATTACHMENT 8

* Federal Airways & Airspace *
* Summary Report: New Construction *
* Antenna Structure *

*

Airspace User: Mark Brauer

File: WEST_HARTFORD_8_CT_SC

Location: Hartford, CT

Latitude: 41°-45'-52.65" Longitude:
72°-43'-23.41"

SITE ELEVATION AMSL.....155 ft.
STRUCTURE HEIGHT.....76 ft.
OVERALL HEIGHT AMSL.....231 ft.

NOTICE CRITERIA

- FAR 77.9(a): NNR (DNE 200 ft AGL)
- FAR 77.9(b): NNR (DNE Notice Slope)
- FAR 77.9(c): NNR (Not a Traverse Way)
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for HFD
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for 4B8
- FAR 77.9(d): NNR (Off Airport Construction)

NR = Notice Required
 NNR = Notice Not Required
 PNR = Possible Notice Required (depends upon actual IFR procedure)
 For new construction review Air Navigation Facilities at

bottom
of this report.

Notice to the FAA is not required at the analyzed location and height
 for slope, height or Straight-In procedures. Please review the 'Air
 Navigation'
 section for notice requirements for offset IFR procedures and EMI.

OBSTRUCTION STANDARDS

- FAR 77.17(a)(1): DNE 499 ft AGL
- FAR 77.17(a)(2): DNE - Airport Surface
- FAR 77.19(a): DNE - Horizontal Surface
- FAR 77.19(b): DNE - Conical Surface
- FAR 77.19(c): DNE - Primary Surface
- FAR 77.19(d): DNE - Approach Surface
- FAR 77.19(e): DNE - Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: HFD: HARTFORD-BRAINARD

Type: A RD: 21056.04 RE: 13.9

- FAR 77.17(a)(1): DNE
- FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.
- VFR Horizontal Surface: DNE
- VFR Conical Surface: DNE
- VFR Approach Slope: DNE
- VFR Transitional Slope: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: 4B8: ROBERTSON FIELD

Type: A RD: 46207.34 RE: 201.6

- FAR 77.17(a)(1): DNE
- FAR 77.17(a)(2): DNE - Greater Than 5.99 NM.
- VFR Horizontal Surface: DNE
- VFR Conical Surface: DNE
- VFR Approach Slope: DNE
- VFR Transitional Slope: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

- FAR 77.17(a)(3) Departure Surface Criteria (40:1)
- DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

- FAR 77.17(a)(4): DNE - No Airway Found

PRIVATE LANDING FACILITIES

FACIL		BEARING	RANGE	DELTA
ARP	FAA	To FACIL	IN NM	
ELEVATION	IFR			
	OCT5 HEL ST FRANCIS HOSPITAL	61.61	1.24	+47
	No Impact to Private Landing Facility Structure is beyond notice limit by 2534 feet.			
	OCT9 HEL HARTFORD HOSPITAL	106.98	2.09	+20
	No Impact to Private Landing Facility Structure is beyond notice limit by 7699 feet.			
+210	CT06 HEL DELTA ONE	62.61	3.17	
	No Impact to Private Landing Facility Structure is beyond notice limit by 14261 feet.			
+183	CT88 HEL RENTSCHLER	99.07	4.31	
	No Impact to Private Landing Facility Structure is beyond notice limit by 21188 feet.			
	CT62 HEL TWIN MANUFACTURING COMPANY	61.99	5.77	+171

No Impact to Private Landing Facility
 Structure is beyond notice limit by 30059 feet.

CT05 HEL KAMAN AEROSPACE CORP 10.21 5.93 +67
 No Impact to Private Landing Facility
 Structure is beyond notice limit by 31031 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA			
APCH	IDNT	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA ST LOCATION
ANGLE	BEAR	-----					
	HFD	ATCT	Y	A/G	118.97	22349	+156 CT
	HARTFORD-BRAINARD		.40				
	HFD	LOCALIZER	I	109.7	120.72	22771	+220 CT RWY 02
	HARTFORD-B		.55	2			
0.00	BDL	RADAR	ON		9.91	64342	-5 CT BRADLEY INTL
	No Impact. This structure does not require Notice based upon EMI. The studied location is within 20 NM of a Radar facility. The calculated Radar Line-Of-Sight (LOS) distance is: 37 NM. This location and height is within the Radar Line-Of-Sight.						
-0.54	HFD	VOR/DME	R	114.9	133.22	65803	-618 CT HARTFORD
-0.01	BAF	VORTAC	R	113.0	.75	144797	-36 MA BARNES
0.00	MAD	VOR/DME	R	110.4	177.05	164477	+11 CT MADISON
0.00	CEF	VORTAC	R	114.0	18.68	166586	-10 MA WESTOVER
.07	HVN	VOR/DME	R	109.8	193.57	188334	+225 CT NEW HAVEN
-0.39	CTR	VOR/DME	I	115.1	342.32	201529	-1369 MA CHESTER
-0.02	ORW	VOR/DME	I	110.0	111.23	211854	-79 CT NORWICH

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.

Movement Method Proof as specified in §73.151(c) is not required.
 Please review 'AM Station Report' for details.

Nearest AM Station: WDRC @ 5830 meters.

Airspace® Summary Version 15.1.384

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Airspace®
Copyright © 1989 - 2015

01-28-2015
11:55:49

ATTACHMENT 9

February 25, 2015

Via Certified Mail, Return Receipt Requested

Scott Slifka, Mayor
Town of West Hartford
50 South Main Street
West Hartford, CT 06107

Re: **Proposed Installation of a “Small Cell” Telecommunications Facility at 3 Arnoldale Road, West Hartford, Connecticut**

Dear Mayor Slifka:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a new “small cell” telecommunications facility at 3 Arnoldale Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside a unipole tower on the roof of the building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside the basement of the building.

The proposed “small cell” facility will provide improved wireless service and capacity relief to Cellco’s existing cell sites in the area. A copy of the Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Petition’s project plans and photo simulations.

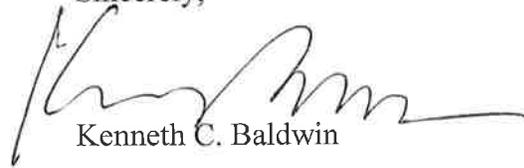
13472273-v1

Robinson+Cole

Scott Slifka, Mayor
February 25, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Baldwin', written over the printed name.

Kenneth C. Baldwin

Attachment

Copy to:

Sandy M. Carter

February 25, 2015

Via Certified Mail, Return Receipt Requested

Todd Dumais, Town Planner
Town of West Hartford
Town of West Hartford
50 South Main Street
West Hartford, CT 06107

Re: Proposed Installation of a “Small Cell” Telecommunications Facility at 3 Arnoldale Road, West Hartford, Connecticut

Dear Mr. Dumais:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a new “small cell” telecommunications facility at 3 Arnoldale Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside a unipole tower on the roof of the building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside the basement of the building.

The proposed “small cell” facility will provide improved wireless service and capacity relief to Cellco’s existing cell sites in the area. A copy of the Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Petition’s project plans and photo simulations.

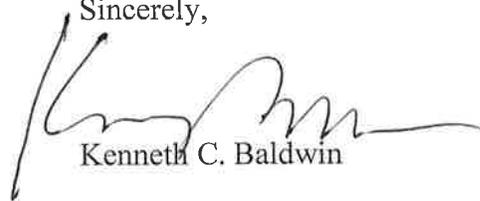
13472395-v1

Robinson+Cole

Todd Dumais, Town Planner
February 25, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Baldwin', with a long horizontal flourish extending to the right.

Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter

February 25, 2015

Via Certified Mail, Return Receipt Requested

Pedro E. Segarra, Mayor
City of Hartford
550 Main Street, 2nd Floor
Hartford, CT 06103

Re: Proposed Installation of a “Small Cell” Telecommunications Facility at 3 Arnoldale Road, West Hartford, Connecticut

Dear Mayor Segarra:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a new “small cell” telecommunications facility at 3 Arnoldale Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside a unipole tower on the roof of the building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside the basement of the building.

The proposed “small cell” facility will provide improved wireless service and capacity relief to Cellco’s existing cell sites in the area. A copy of the Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Petition’s project plans and photo simulations.

13472403-v1

Robinson+Cole

Pedro E. Segarra, Mayor
February 25, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

Attachment

Copy to:

Sandy M. Carter

February 25, 2015

Via Certified Mail, Return Receipt Requested

Benjamin Scholfield
Sovereign Management
106 Kane Street
West Hartford, CT 06119

Re: **Proposed Installation of a “Small Cell” Telecommunications Facility on Property of
775 Farmington Avenue WH LLC at 3 Arnoldale Road, West Hartford,
Connecticut**

Dear Mr. Scholfield:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a new “small cell” telecommunications facility at 3 Arnoldale Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside a unipole tower on the roof of the building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside the basement of the building.

The proposed “small cell” facility will provide improved wireless service and capacity relief to Cellco’s existing cell sites in the area. A copy of the Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Petition’s project plans and photo simulations.

13472403-v1

Robinson+Cole

Benjamin Scholfield
February 25, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter

ATTACHMENT 10

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

February 25, 2015

Via Certified Mail, Return Receipt Requested

«Name_and_Address»

Re: Notice of Intent to File a Petition for Declaratory Ruling with the Connecticut Siting Council for the Installation of a “Small Cell” Telecommunications Facility at 3 Arnoldale Road, West Hartford, Connecticut

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a new “small cell” telecommunications facility at 3 Arnoldale Road in West Hartford (the “Property”). The “small cell” will consist of a single canister-type antenna and remote radio head concealed inside a unipole tower on the roof of the building. The unipole will be disguised as an exhaust stack. Equipment associated with the “small cell” will be located inside the basement of the building. A copy of the project plans and photosimulations are attached for your review.

This notice is being sent to you because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council’s process for reviewing the Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

February 25, 2015
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter

Cellco Partnership



d.b.a. **verizon** wireless
WIRELESS COMMUNICATIONS FACILITY

WEST HARTFORD 8 SC
 3 ARNOLDALE ROAD
 WEST HARTFORD, CT 06119

SITE DIRECTIONS

FROM: 88 EAST MAIN STREET, WEST HARTFORD, CT 06119

TO: 3 ARNOLDALE ROAD, WEST HARTFORD, CT 06119

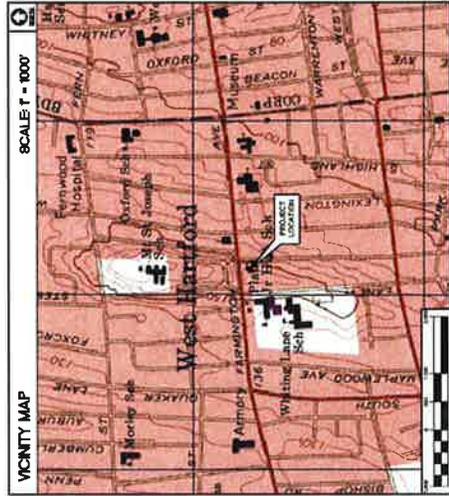
- Head northward on E Main St toward South St.
- Turn left to stay on E Main St.
- Turn right onto the road that leads to Hartford/Route 91.
- Turn left onto the road that leads to Hartford/Route 91.
- Turn right onto South St.
- Turn left onto Arnoldale Ave.
- Turn right onto Arnoldale Ave.
- Turn left onto Arnoldale Rd.
- Turn left onto Arnoldale Rd.

GENERAL NOTES

- PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLO PARTNERSHIP.

PROJECT SCOPE

- THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE INSTALLATION OF A PROPOSED TELECOMMUNICATIONS EQUIPMENT CABINET LOCATED WITHIN AN 8'x8' LOOSE AREA AT EXISTING LEVEL.
- A TOTAL OF ONE (1) DUAL ANTENNA, AND ASSOCIATED APPURTENANCES ARE PROPOSED TO BE INSTALLED WITH THE PROPOSED CELLO PARTNERSHIP ANTENNA CABINET AT 45.1' PL. THE ANTENNA SHALL BE MOUNTED ON THE ROOF OF THE BUILDING AS SHOWN ON THE ATTACHED DRAWINGS.
- ELECTRIC AND TELE UTILITIES SHALL BE LOCATED FROM DRAWINGS LOCATED WITHIN OR ADJACENT TO THE EXISTING BUILDING TO THE PROPOSED CELLO PARTNERSHIP EQUIPMENT CABINET AT GRADE.
- THE 2005 INTERNATIONAL BUILDING CODE SHALL BE OBSERVED IN CONFORMANCE WITH SUPPLEMENT.
- THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
- THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.



PROJECT SUMMARY

SITE NAME: WEST HARTFORD 8 SC
 SITE ADDRESS: 3 ARNOLDALE ROAD, WEST HARTFORD, CT 06119
 LICENSE/TENANT: CELLO PARTNERSHIP
 CONTACT PERSON: SANDY CARTER
 CONTACT PHONE: (860) 863-8219
 SITE COORDINATES: LATITUDE: 41°-45'-52.647" N, LONGITUDE: 72°-43'-23.469" W, GROUND ELEVATION: 210.41' +0.00'

WORKS AND OROING ELEVATION REPORTS FOR THIS PROJECT ARE AVAILABLE FROM THE WIRELESS BY MARTINEZ CORRI AND ASSOCIATES, L.L.C. DATED JANUARY 02, 2014, LAST REVISED DECEMBER 11, 2014.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	ADDITIONS MAP	0
C-2	SITE / ROOF PLAN, ELEVATION AND ANTENNA CONSTRUCTION	0

Cellco Partnership d/b/a Verizon Wireless
 WIRELESS COMMUNICATIONS FACILITY
 WEST HARTFORD 8 SC
 3 ARNOLDALE ROAD
 WEST HARTFORD, CT 06119

DATE: 02/19/13
 SCALE: AS SHOWN
 JOB NO. 13021001

TITLE SHEET

T-1

www.CellcoPartnership.com
 300 North Bedford Road
 West Hartford, CT 06110
 (860) 863-8200 fax
 (860) 863-8200

Cellco Partnership
 d.b.a. Verizon Wireless

REV.	DATE	CHANGED BY	DESCRIPTION
0	02/17/13	DMH	ISSUED FOR CONSTRUCTION



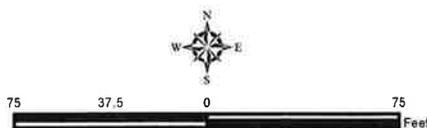
Legend

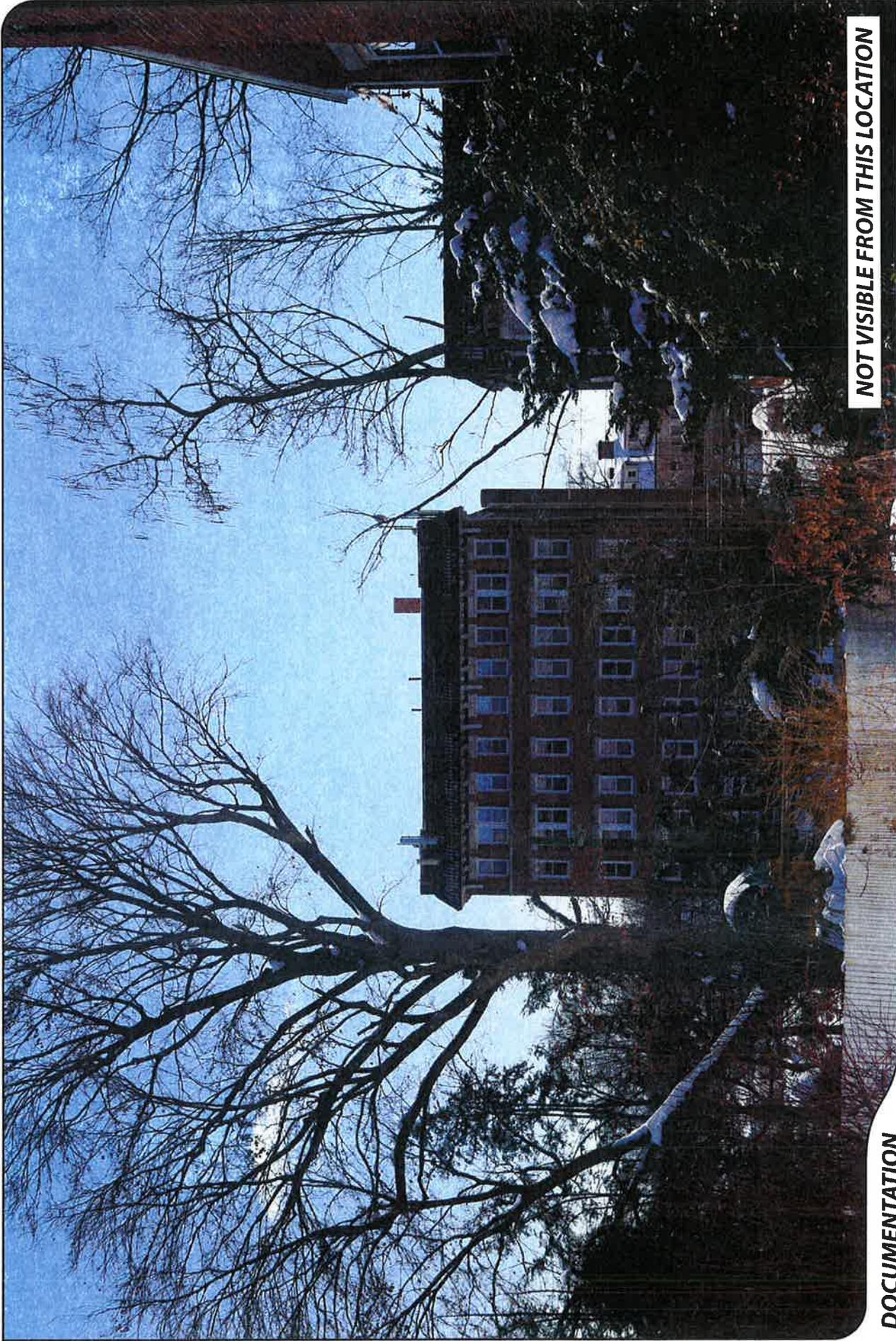
-  Host Property
-  Approximate Parcel Boundary (CTDEEP GIS)

Site Schematic

Proposed Small Cell Installation
 West Hartford SC 8 CT
 3 Arnold Road
 West Hartford, Connecticut

Map Notes:
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 75 feet
 Map Date: January 2015





NOT VISIBLE FROM THIS LOCATION

DOCUMENTATION

PHOTO

1

LOCATION

WEST HILL DRIVE

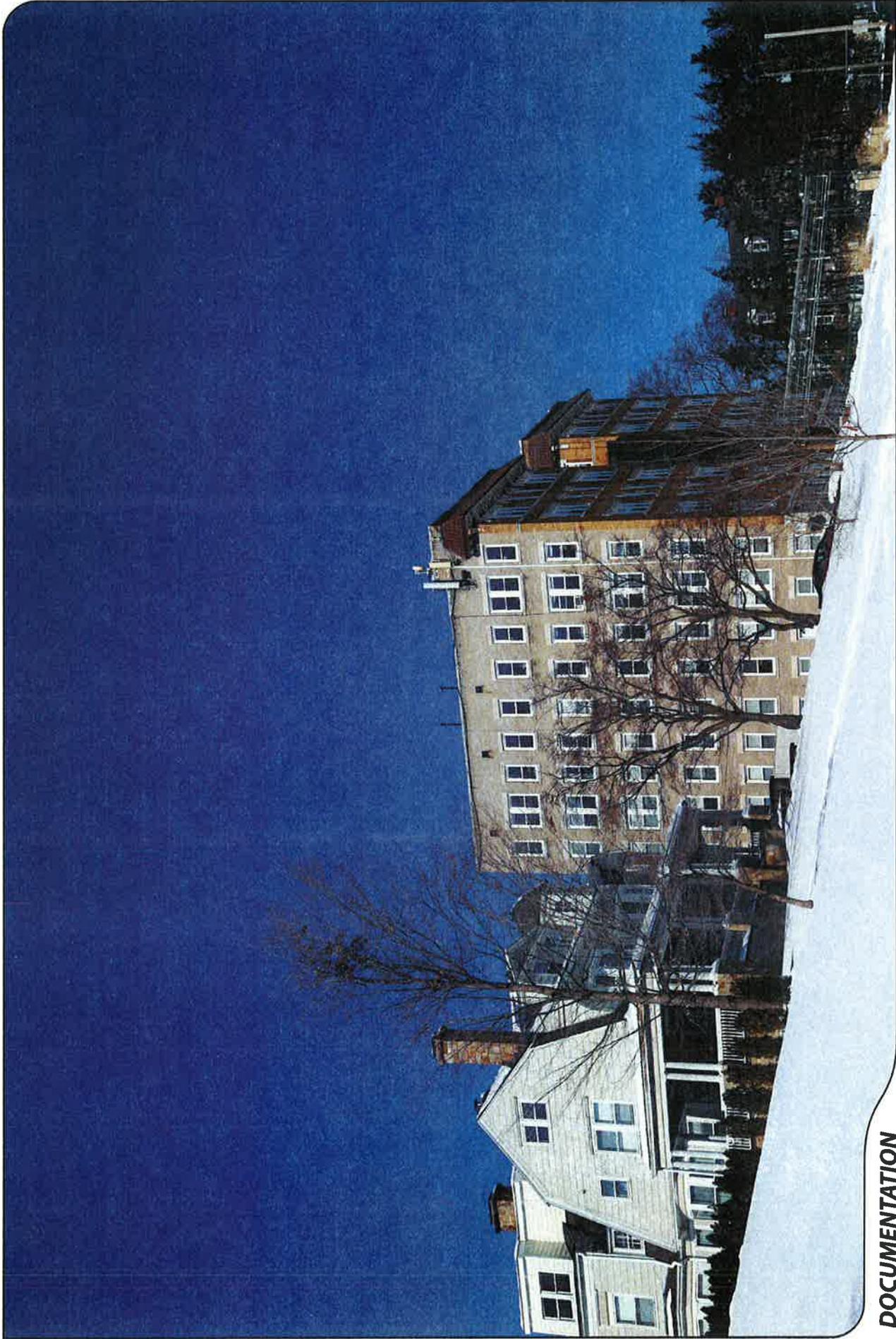
ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 315 FEET





DOCUMENTATION

PHOTO

2

LOCATION

ARNOLDALE ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

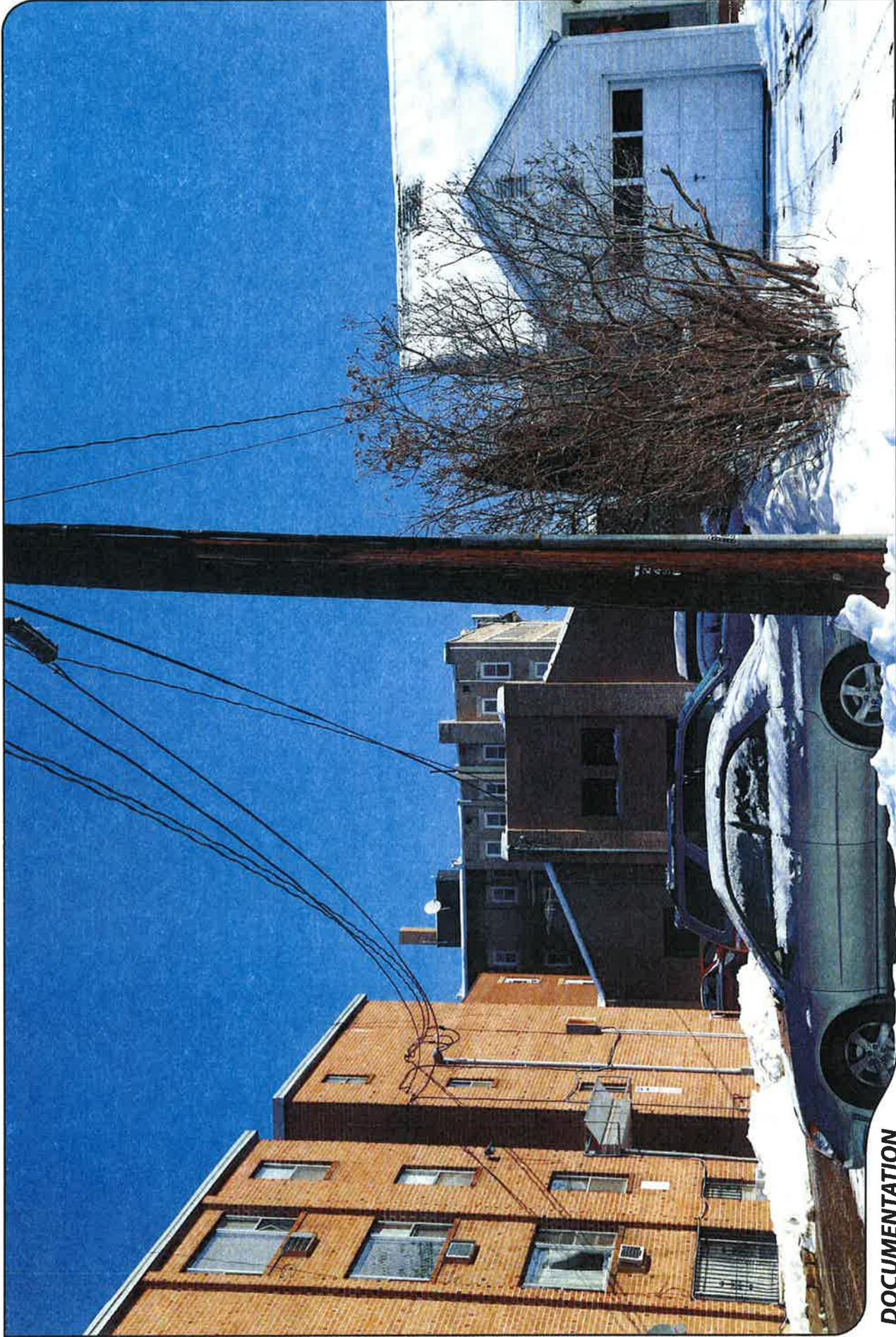
+/- 280 FEET



ALL-POINTS
TECHNOLOGY CORPORATION



verti.con
business



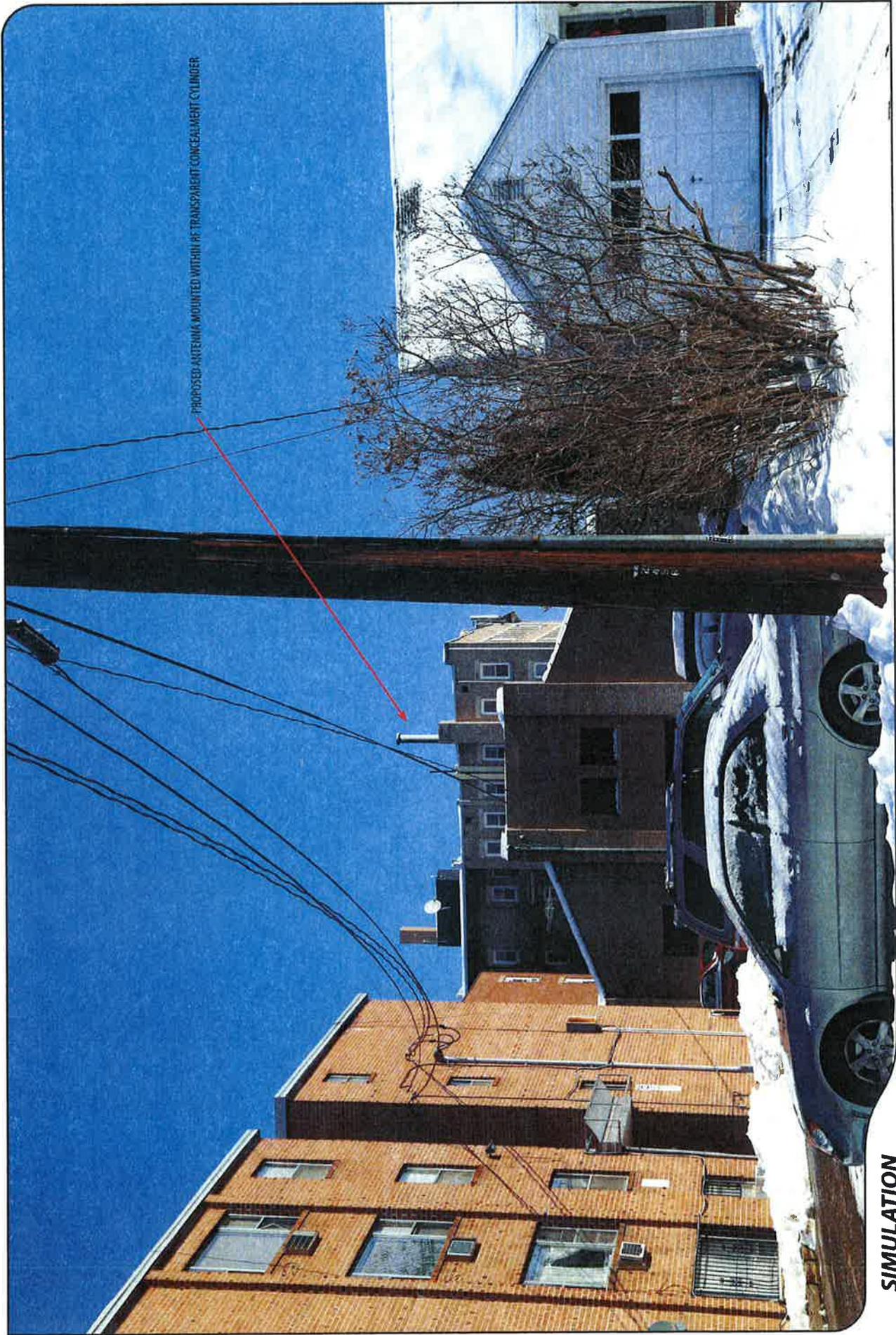
DOCUMENTATION

PHOTO
3

LOCATION
WHITING LANE

ORIENTATION
EAST

DISTANCE TO SITE
+/- 315 FEET



PROPOSED ANTENNA MOUNTED WITHIN RF TRANSPARENT CONCEALMENT CYLINDER

SIMULATION

PHOTO

3

LOCATION

WHITING LANE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 315 FEET

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

**ABUTTERS LIST
MAP H8/BLOCK 0151/LOT 3**

**3 ARNOLDALE ROAD
WEST HARTFORD, CONNECTICUT**

	<u>Map/Block/Lot</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
1.	H8/0151/9	9 Arnoldale Road	George M. Lewis 9 Arnoldale Road West Hartford, CT 06119
2.	H8/1891/755	755 Farmington Avenue	755 Farmington Avenue WH LLC 1429 Park Street, Suite 205 Hartford, CT 06106
3.	H8/1891/745	745 Farmington Avenue	755 Farmington Avenue WH LLC 1429 Park Street, Suite 205 Hartford, CT 06106
4.	H8/0151/10	10 Arnoldale Road	James P. Stodder and Elizabeth A. Curry 10 Arnoldale Road West Hartford, CT 06119
5.	H8/0151/8	8 Arnoldale Road	Sodeth Tek and Srun C. Tek 8 Arnoldale Road West Hartford, CT 06119
6.	H8/1891/737	737 Farmington Avenue	Frances C. Murray 180 Anita Street Deland, FL 32724
7.	H8/5993/5	5 West Hill Drive	Charles P. and Jessica L. Colliton 5 West Hill Drive West Hartford, CT 06119
8.	H8/5993/7	7 West Hill Drive	Colleen E. and James F. Graham, Jr. 7 West Hill Drive West Hartford, CT 06119
9.	D4/2541/6	6 Hamilton Avenue	Brian S. Federman 6 Hamilton Drive West Hartford, CT 06117