

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 :  
 AT 56 BUENA VISTA ROAD, WEST :  
 HARTFORD, CONNECTICUT : OCTOBER 22, 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 Veterans Memorial Ice Arena building at 56 Buena Vista Road in West Hartford, Connecticut (the “Property”). The Property is owned by the Town of West Hartford (“Town”). Cellco identifies this proposed cell site as its Farmington SC1 Facility.

II. Factual Background

The Property is a 8.76-acre parcel at the northerly side of Buena Vista Road in West Hartford. The Property is located in the Town’s R-10 zone and is surrounded by municipal

recreational uses and open space to the north, east and south and single family residential uses to the west. (See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph)).

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 Farmington SC1 Facility described above will provide wireless service in Cellco’s 2100 MHz (AWS) frequency range only and capacity relief to Cellco’s surrounding cell sites in West Hartford and Farmington.

### III. Proposed “Small Cell” Facility

The proposed Farmington SC1 Facility would consist of a single canister-type antenna (Model NH-360QS-DG-F0M) and remote radio head (“RRH”) located inside an approximately 18-inch diameter “unipole” tower attached to the northerly 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 nine (9) feet above the existing roof dome. Equipment associated with the small cell will be located inside an existing equipment room, inside the building. Power and telephone service to the small cell equipment will extend from existing service inside the arena. (See Cellco’s Project Plans included in Attachment 2). Project engineers have determined that the building is structurally capable of supporting the unipole tower and related equipment. (See Attachment 3 – Structural Feasibility Letter dated October 20, 2015). Included in Attachment 4 are the specifications for the small cell antenna and RRH that Cellco intends to install at this site.

### 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 towers<sup>1</sup> “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 ice arena 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.

2. Visual Effects

The installation of the Farmington SC1 Facility 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 will appear as an existing building feature. (See Limited Visual Assessment and Photo-Simulations included in Attachment 5).

3. FCC Compliance

Radio frequency (“RF”) emissions from the proposed Cellco small cell installation will be well within the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 6 is a General Power Density table for the Farmington SC1 Facility confirming that the installation will operate well within the FCC’s safety limits.

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<sup>1</sup> 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.

4. FAA Summary Report

Included in Attachment 7 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 October 22, 2015, a copy of this Petition was sent to West Hartford's Mayor Scott Slifka, Town Attorney Patrick G. Alair and Town Planner Todd Dumais. Included in Attachment 8 is a copy of the letters sent to Mayor Slifka, Mr. Alair and Mr. Dumais.

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 a copy of the Petition is included in Attachment 9.

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 attached to the roof of the building at the Property to support a small cell antenna 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  \_\_\_\_\_

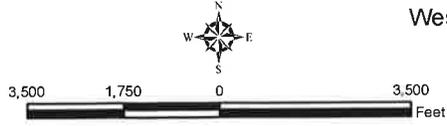
Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597  
(860) 275-8200  
Its Attorneys

# **ATTACHMENT 1**



- Legend**
- ✕ Proposed Verizon Wireless Facility
  - ✕ Surrounding Verizon Wireless Facilities
  - Municipal Boundary
  - ~ Watercourse (CTDEEP)
  - ⬮ Waterbody (CTDEEP)

Base Map Source: 2012 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 3,500 feet  
 Map Date: October 2015



**Site Vicinity Map**

Proposed Small Cell Facility  
 Farmington SC1 CT  
 56 Buena Vista Road  
 West Hartford, Connecticut





- Legend**
-  Approximate Subject Property
  -  Proposed Equipment
  -  Approximate Parcel Boundary (CTDEEP GIS)

**Site Schematic**

Proposed Small Cell Facility  
 Farmington SC1 CT  
 56 Buena Vista Road  
 West Hartford, Connecticut



Map Notes:  
 Base Map Source: ESRI World Imagery, NAIP 7/17/2014  
 Map Scale: 1 in = 100 ft  
 Map Date: October 2015



# **ATTACHMENT 2**

# Cellco Partnership

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

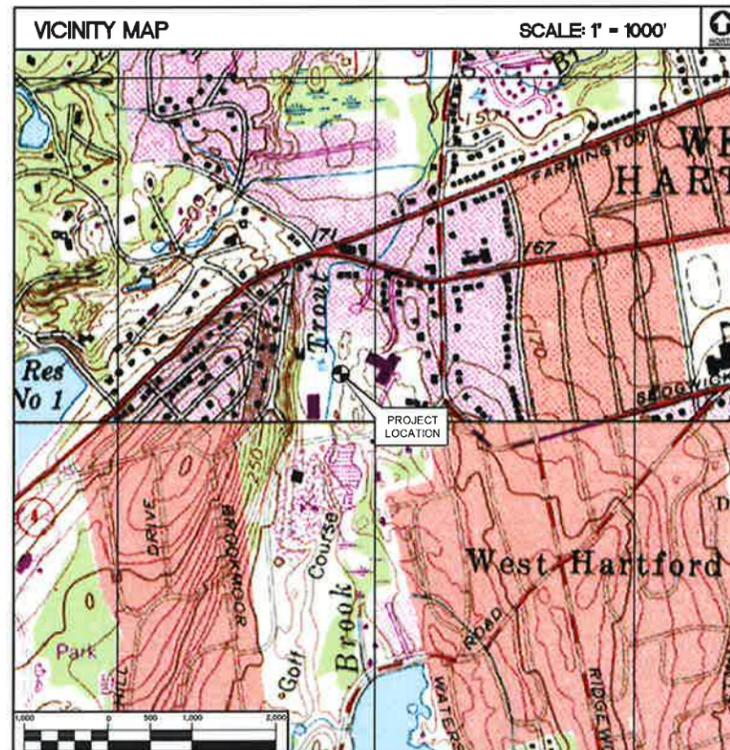
## WIRELESS COMMUNICATIONS FACILITY

FARMINGTON SC1  
56 BUENA VISTA ROAD  
WEST HARTFORD, CT

SITE DIRECTIONS	
FROM:	TO:
99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	56 BUENA VISTA ROAD WEST HARTFORD, CT
1. Head northeast on E River Dr toward Darlin St	0.3 mi
2. Turn left to stay on E River Dr	400 ft
3. Take the first left onto Connecticut Blvd/US-44 W	0.1 mi
4. Merge onto I-84W	4.6 mi
5. Take exit 43 towards W Hartford Center	0.5 mi
6. Turn left onto Park Rd	0.4 mi
7. Park Rd becomes Sedgwick Rd	1.0 mi
8. Sedgwick Rd becomes Mountain Rd	100 ft
9. Turn left onto Buena Vista Rd. Destination will be on the left	0.2 mi

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 MOUNTED IN EXISTING ELECTRICAL ROOM ON EXISTING CONCRETE PAD AT GROUND FLOOR LEVEL.
2. (1) OMNI-DIRECTIONAL ANTENNA, (1) REMOTE RADIO HEAD AND (1) OVP DISTRIBUTION BOX ARE PROPOSED TO BE MOUNTED WITHIN A PROPOSED RF TRANSPARENT FAUX SMOKE STACK MOUNTED TO POLE MAST ATTACHED TO THE EXTERIOR WALL OF BUILDING. THE ANTENNA IS PROPOSED TO HAVE A CENTERLINE ELEVATION OF 44.9'.
3. POWER AND TELCO UTILITIES SHALL BE ROUTED FROM EXISTING DEMARCS OR ADJACENT TO THE SUBJECT BUILDING.
4. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.

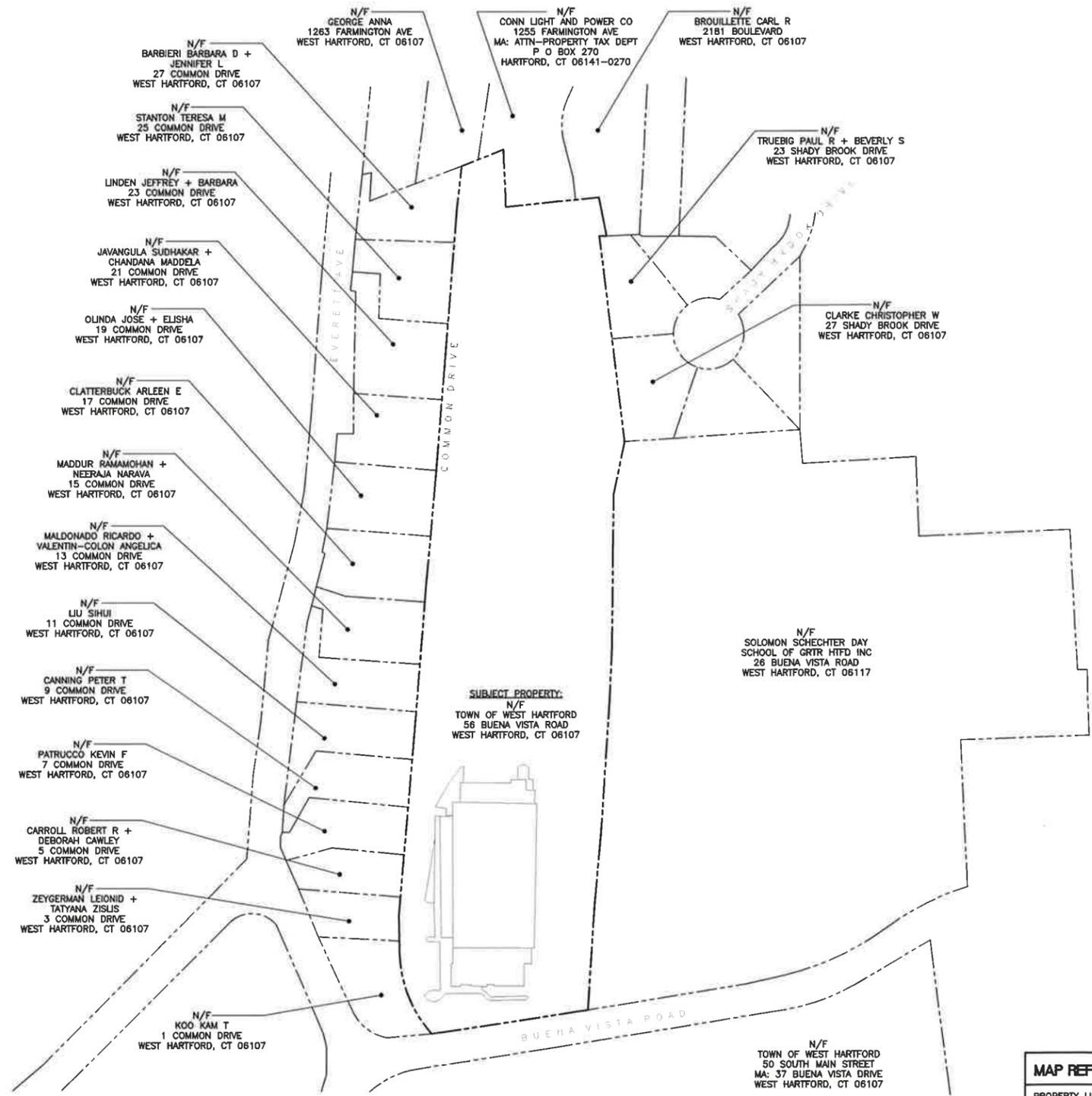
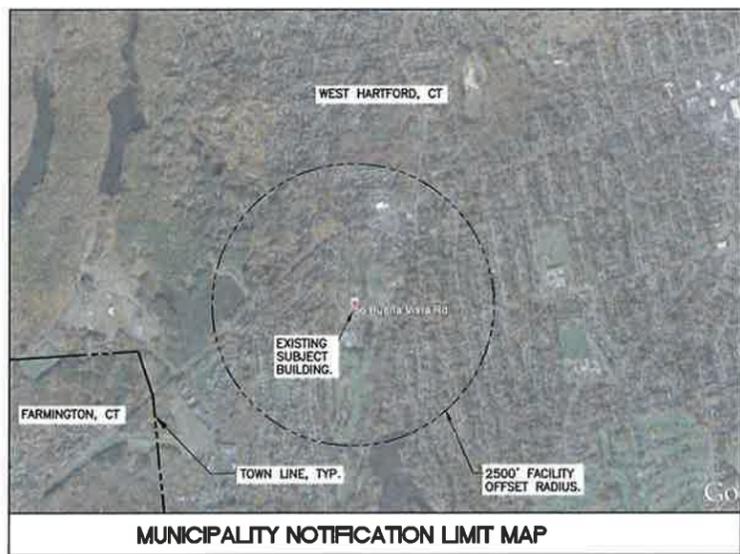


PROJECT SUMMARY	
SITE NAME:	FARMINGTON SC1
SITE ADDRESS:	56 BUENA VISTA ROAD WEST HARTFORD, CT
CELLCO PARTNERSHIP/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	ALEKSEY TYURIN CELLCO PARTNERSHIP (860) 933-1534
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 275-8345
SITE COORDINATES:	LATITUDE: 41°-45'-02.638" N LONGITUDE: 72°-46'-05.397" W GROUND ELEVATION: ±169.5' AMSL
COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED MAY 5, 2015.	

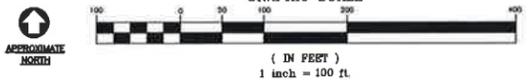
SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
C-1	ABUTTERS MAP	1
C-2	PLANS, ELEVATION AND ANTENNA CONFIGURATION	1

(203) 868-0580 (203) 868-8897 Fax 63-2 North Farmington Road Branford, CT 06405 www.CentekEng.com	
Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY <b>FARMINGTON SC1</b> 56 BUENA VISTA ROAD WEST HARTFORD, CT	
DATE:	10/06/15
SCALE:	AS NOTED
JOB NO.	14232.000
TITLE SHEET	
<h1>T-1</h1>	
Sheet No. 1 of 3	

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	10/20/15	JTD	DMD	ISSUED FOR CSC
0	10/06/15	JTD	DMD	ISSUED FOR CSC - CLIENT REVIEW



**1 ABUTTERS MAP**  
C-1 SCALE: 1" = 100'

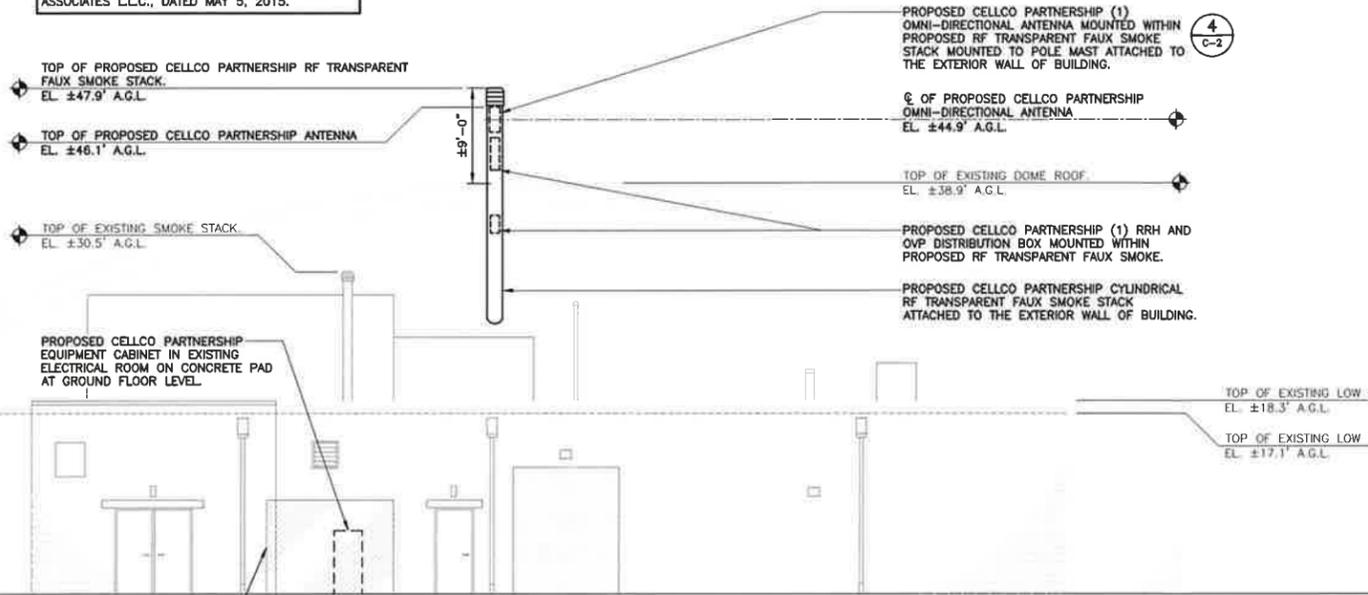


**MAP REFERENCE NOTE:**  
PROPERTY LINES AND PROPERTY OWNER INFORMATION SHOWN HEREIN ARE REFERENCED FROM THE TOWN OF WEST HARTFORD GIS DATA BASE. SITE FEATURES SHOWN HEREIN ARE REFERENCED FROM AVAILABLE MAPPING ON GOOGLE EARTH PRO.

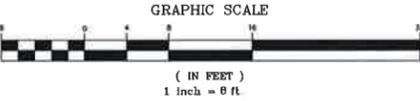
(203) 488-0060 (203) 488-8887 Fax 65-2 North Branford Road Branford, CT 06405 www.CentekEng.com	
<b>Cellco Partnership d/b/a Verizon Wireless</b> WIRELESS COMMUNICATIONS FACILITY <b>FARMINGTON SCT</b> 56 BUENA VISTA ROAD WEST HARTFORD, CT	
DATE:	10/06/15
SCALE:	AS NOTED
JOB NO.	14232.000
<b>ABUTTERS MAP</b>	
<b>C-1</b>	
Sheet No. 2 of 3	

REV.	DATE	DRAWN BY	CHKD BY	DESCRIPTION
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0	10/06/15	JTD	DND	ISSUED FOR CSC - CLIENT REVIEW

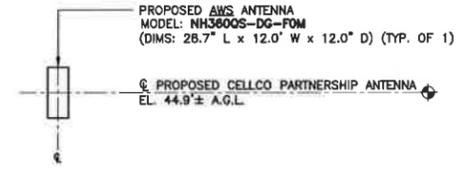
HEIGHTS SHOWN HEREIN ARE REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED MAY 5, 2015.



**2 NORTH ELEVATION**  
C-2 SCALE: 1/8" = 1'



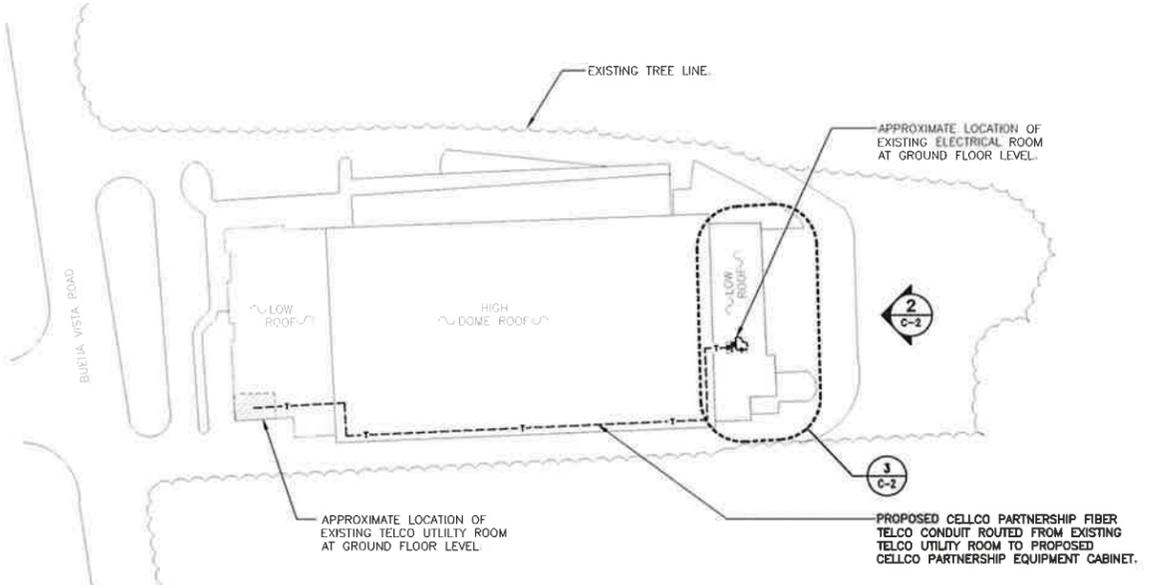
**4 TYP. ANTENNA MOUNTING CONFIGURATION**  
C-2 NOT TO SCALE



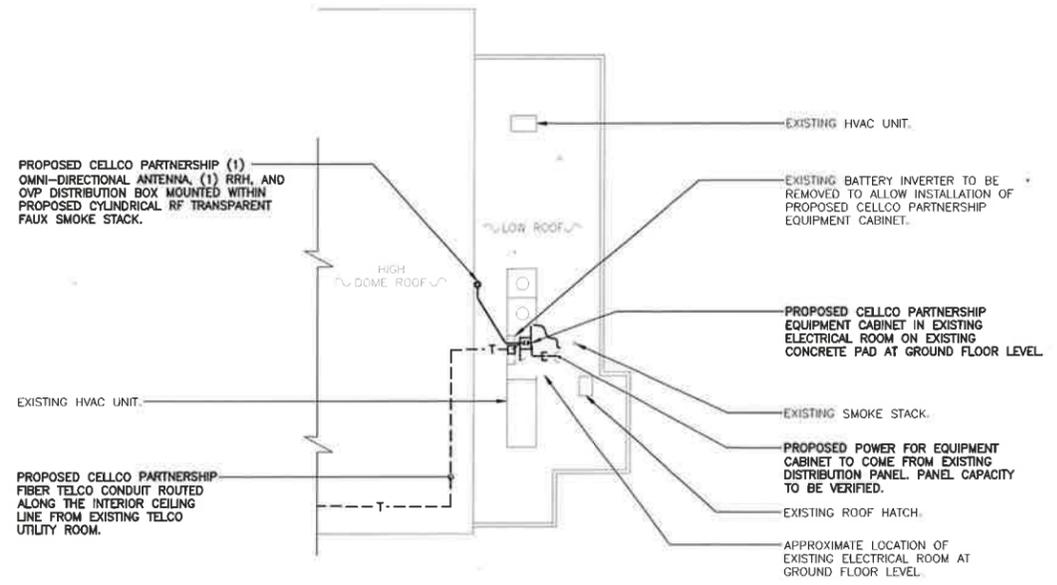
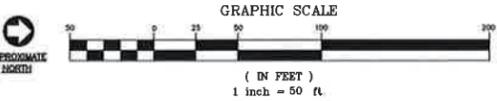
**RRH/DISTRIBUTION BOX MOUNTING NOTE**

- AWS RRH (MODEL: ALU RRH 2x60-AWS) (DIMS: 36.7" L x 10.6" W x 5.8" D) (TYP. OF 1)
- OVP DISTRIBUTION BOX (MODEL: RC2DC-1064-PF-48) (DIMS: 20.58" L x 10.15" W x 8.2" D) (TYP. OF 1)

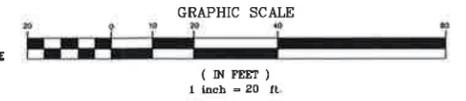
RRH AND OVP TO BE MOUNTED WITHIN PROPOSED RF TRANSPARENT FAUX SMOKE STACK



**1 SITE LOCATION PLAN**  
C-2 SCALE: 1" = 50'



**3 PARTIAL ROOF PLAN**  
C-2 SCALE: 1" = 20'



ISSUED FOR CSC	DATE	ISSUED FOR CSC	DESCRIPTION
1	10/28/15	0	PROVIN EN CH'D BY
0	10/08/15	0	REV.

PROFESSIONAL ENGINEER SEAL

Celco Partnership  
d.b.a. Verizon Wireless

**CENTEK engineering**  
Committed Solutions  
(203) 486-0380  
(203) 486-6397 Fax  
652 North Brentford Road  
Branford, CT 06405  
www.CentekEng.com

**Cellco Partnership d/b/a Verizon Wireless**  
WIRELESS COMMUNICATIONS FACILITY  
**FARMINGTON SC1**  
56 BUENA VISTA ROAD  
WEST HARTFORD, CT

DATE: 10/08/15  
SCALE: AS NOTED  
JOB NO. 14232.000

PLANS,  
ELEVATION &  
ANTENNA CONFIG.

**C-2**  
Sheet No. 3 of 3

# **ATTACHMENT 3**

October 20, 2015

Mr. Brian Paul  
Verizon Wireless  
99 East River Drive  
East Hartford, Connecticut 06108

Re: Structural Feasibility Letter  
Verizon Wireless Site Farmington SC 1  
56 Buena Vista Road  
West Hartford, Connecticut

CEN TEK Project No. 14232.000

Dear Mr. Paul,

This letter is to confirm the structural feasibility of constructing the proposed wireless communications facility at the referenced property. Structural documentation of the existing building by Purcell Associates (marked revision 2 "For Construction") dated 04/24/2000 was available. A site visit by Centek personnel was conducted on 09/19/2014 for the purpose of documenting existing dimensions and configurations. A preliminary structural analysis was prepared for use in making a final recommendation.

The host building is a 1-story structural timber, structural steel and concrete masonry unit (CMU) framed structure currently utilized as a sports facility. The first level is at grade. The facilities dome roof consists of glued laminated timbers (glu-lam) installed in a Tudor arch design. Subsequent wood joists provide lateral bracing for the arches as well as support for the roof decking. Adjacent structures consist of structural steel framing. Of particular concern was the exterior 12 inch CMU bearing wall to be utilized for connection of the antenna concealment faux smoke stack. Material strength and the amount of reinforcing steel are based on the *Masonry Notes* section under the *General Notes* of the existing structural drawings.

The weight of the Verizon equipment, antenna, steel framing and antenna concealment faux smoke stack along with applicable wind, snow and occupant loadings will be transferred to the structural bearing of the host building through the aforementioned CMU bearing wall. The wall was verified utilizing the existing building dead and live loads in conjunction with the worst-case maximum reaction.

Centek Engineering, Inc. will prepare sealed design documents for the proposed unmanned wireless communications facility located on the roof of the 1-story ( $\pm$  38.9 ft.) host building. The final design will comply with the requirements of the 2005 Connecticut

**CEN TEK** engineering, INC.  
Structural Feasibility Letter  
Verizon Wireless ~ Farmington SC 1  
56 Buena Vista Road  
West Hartford, 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 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.

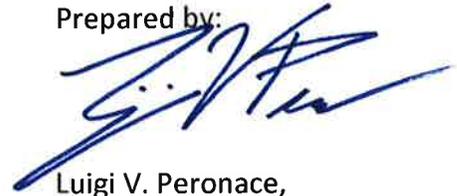
Respectfully Submitted by:



Carlo F. Centore, PE  
Principal ~ Structural Engineer



Prepared by:



Luigi V. Peronace,  
Structural Engineer

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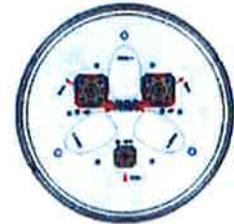
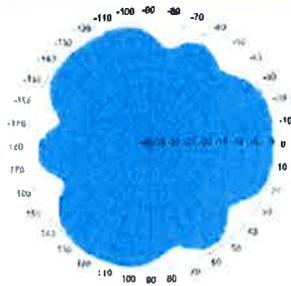
# **ATTACHMENT 4**

Metro Cell Antennas with Internal Diplexer and GPS Antenna

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

NH360QS-DG-F0M

NH360QT-DG-F0



ELECTRICAL SPECIFICATIONS

Operating Frequency Range	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170
Frequency Bands, MHz										
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
USLS, 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

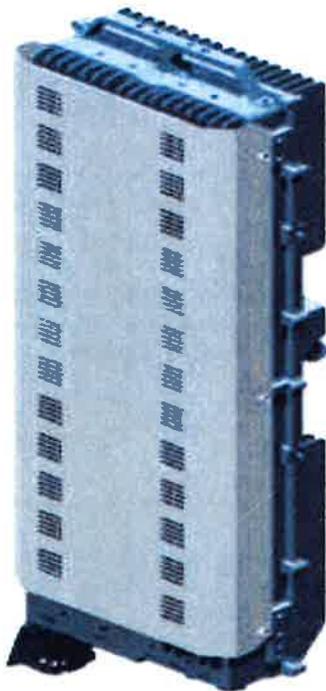
Connector Interface	7 - 16 DIN Female	7 - 16 DIN Female
Connector Quantity, Location	2, Bottom	2, Bottom
GPS Connector Interface	4.1/9.5 DIN Female	4.1/9.5 DIN Female
GPS Connector Quantity, Location	1, Bottom	1, Bottom
Length, mm (inch)	730 (28.7)	360 (14.2)
Outer Diameter, mm (inch)	305 (12.0)	305 (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
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# 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.

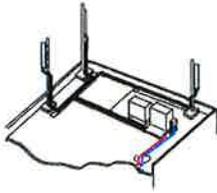
### EASY INSTALLATION

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.

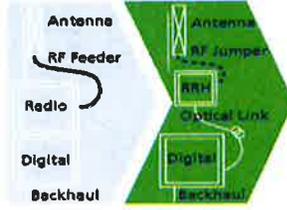
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

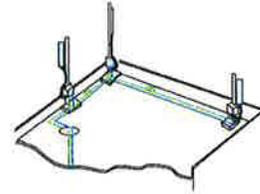
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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)

### 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)

### 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

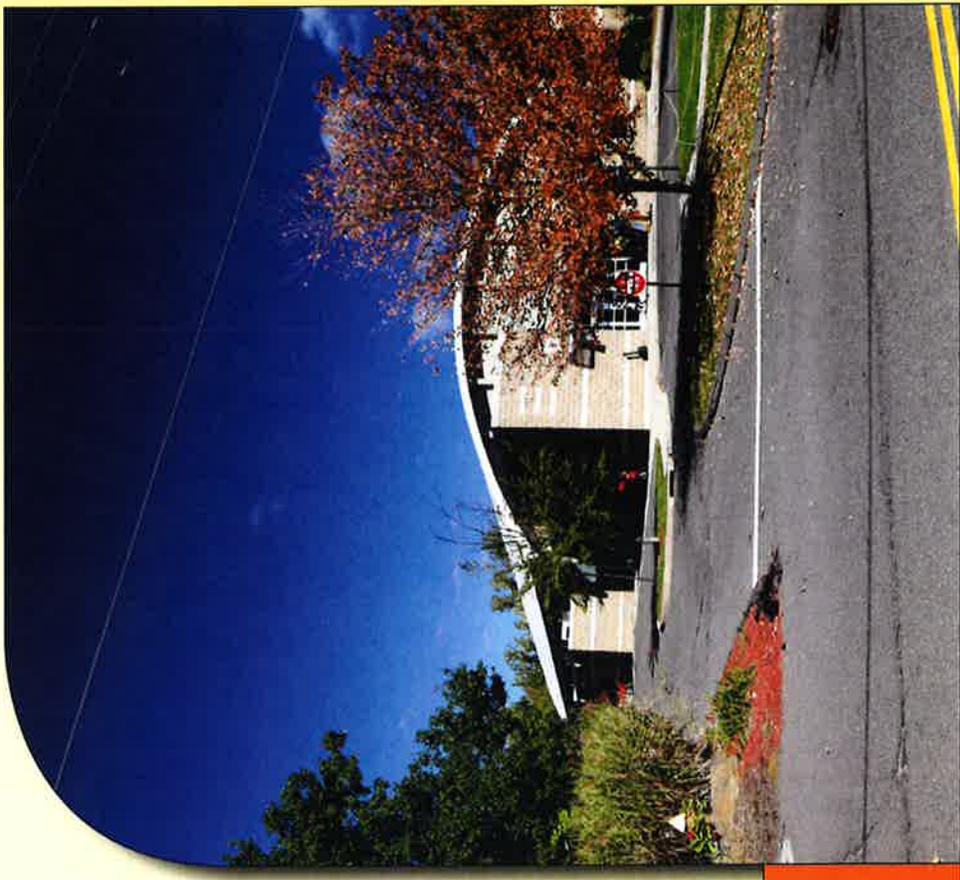
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# **ATTACHMENT 5**

# Limited Visual Assessments and Photo-Simulations

FARMINGTON SC1  
56 BUENA VISTA ROAD  
WEST HARTFORD, CT



*Prepared in October 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 56 Buena Vista Road in Farmington, Connecticut (the "Property").

## Project Setting

The Property is located north of Buena Vista Road and is currently developed with a partially-domed ice rink. The proposed Facility would include the installation of one (1) omni-directional antenna enclosed within an RF-transparent, faux smoke stack affixed to a low roof parapet (18± feet high) behind the dome. The faux smoke stack would rise to a height of approximately 48 feet above existing grade, about 9 feet above the dome roof. An existing smoke stack and other rooftop appurtenances are located on the low roof of the building. Associated ground equipment cabinets would be located within an existing interior utility room.

## Methodology

On October 7, 2015, APT personnel conducted a field reconnaissance to photo-document 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 lens set to 24 mm in order to provide a greater depth of field for presentation in this report. Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. A 24 mm focal length provides a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive.

*"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."<sup>1</sup>*

When taking photographs for these analyses, APT prefers a focal length of 50 mm; however there are times when wider views (requiring the use of alternate lens settings, as in this case) can better reflect "real world" viewing

---

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

conditions by providing greater context to the scene. Regardless of the lens setting, the scale of the subject in the photograph and corresponding simulation remains proportional to its surroundings.

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 format<sup>2</sup>. A photolog map and copies of the existing conditions and photo-simulations are attached.

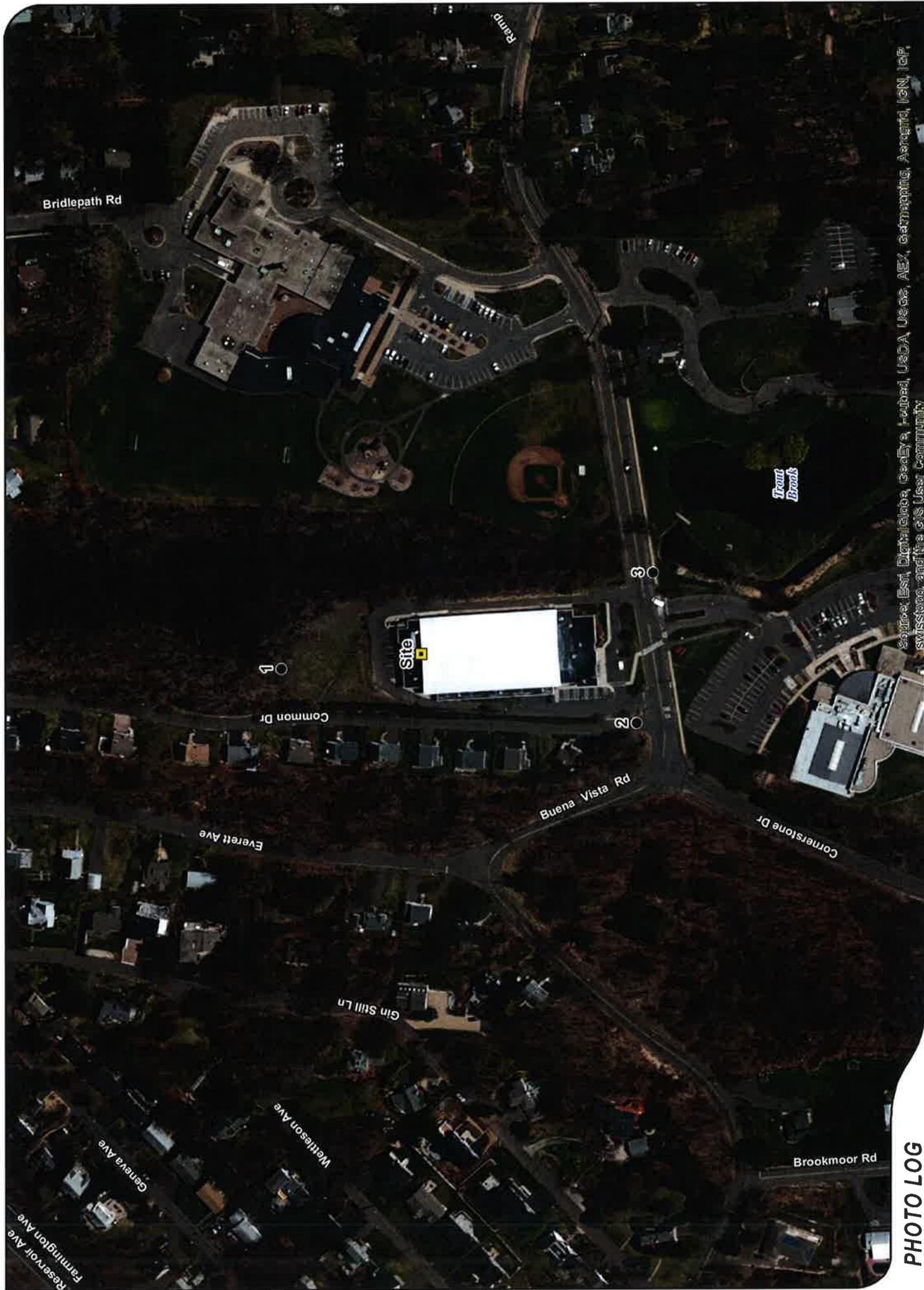
## Conclusions

The visibility of the proposed installation would be limited primarily to northern (rear) locations on the Property, behind the ice rink. Adjacent locations off the Property to the east and west have sufficient vegetative screening such that direct lines of sight to the building are heavily obscured. To the south, along Buena Vista Road, the proposed Facility will not rise substantially above the domed roof. 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 effect on existing views.

---

<sup>2</sup> 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.

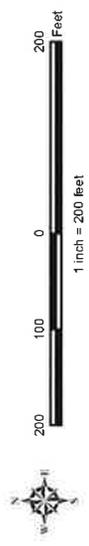
## **ATTACHMENTS**

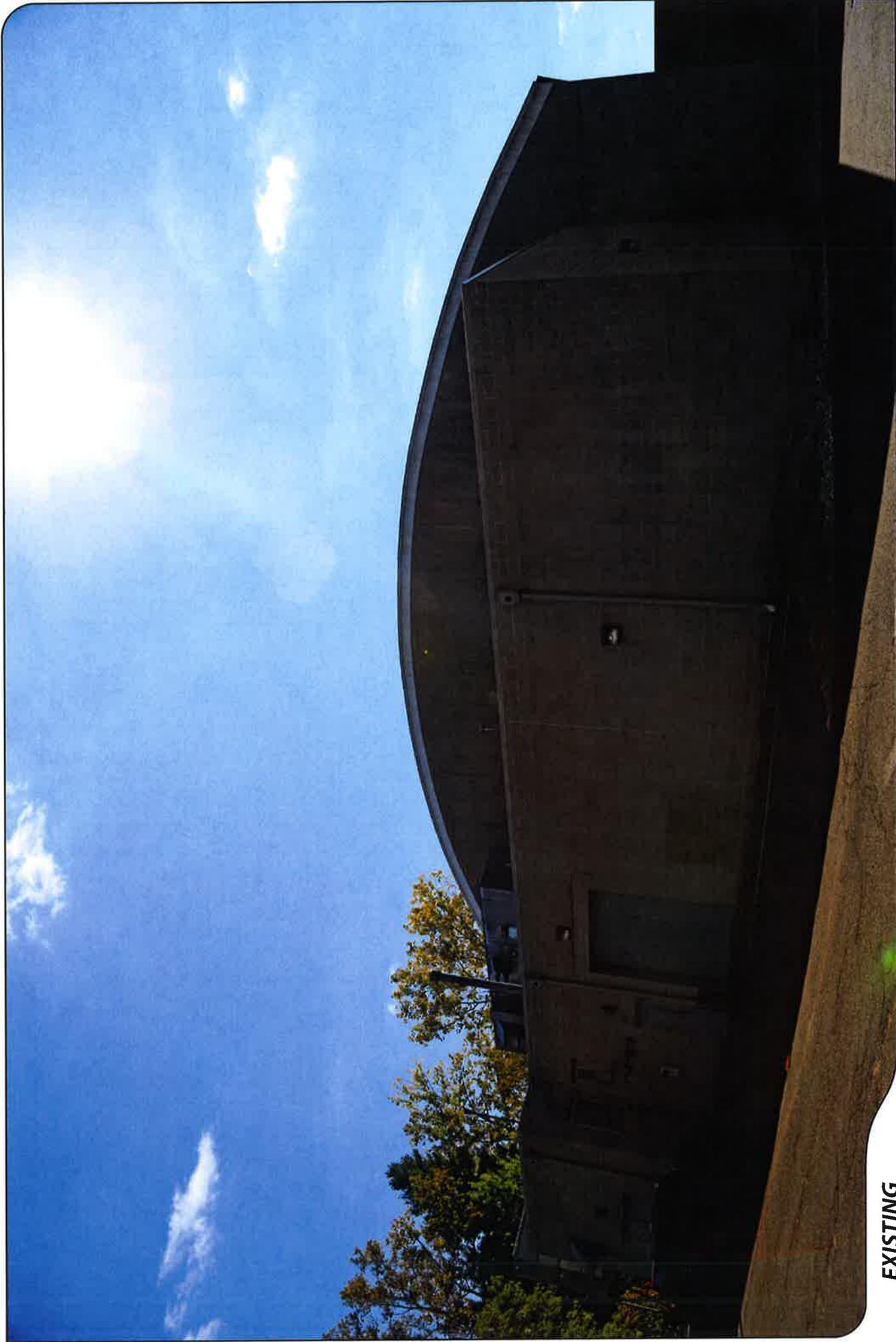


Source: Esri, DigitalGlobe, GeoEye, Earthstar, IGN, USGS, AeroGRID, IGN, IGP, Swire, and the City of User Community

# PHOTO LOG

- Legend
- Site
  - Photo Location





**EXISTING**

PHOTO

1

LOCATION

HOST PROPERTY (24mm Focal Length)

ORIENTATION

**SOUTHEAST**

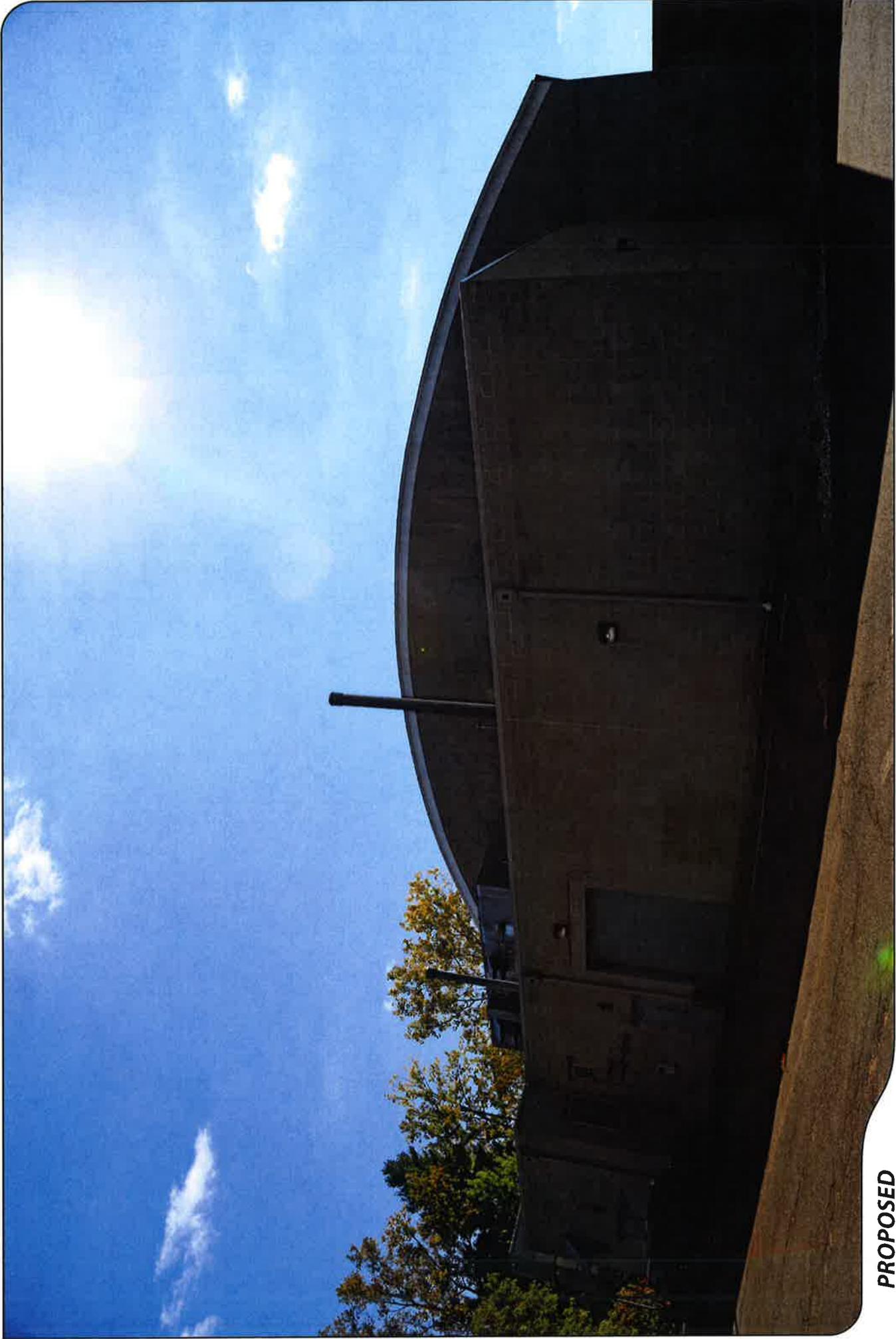
DISTANCE TO SITE

**+/- 114 FEET**



ALL-POINTS  
TECHNOLOGY CORPORATION





**PROPOSED**

PHOTO

1

LOCATION

HOST PROPERTY (24mm Focal Length)

ORIENTATION

**SOUTHEAST**

DISTANCE TO SITE

**+/- 114 FEET**



ALL-POINTS  
TECHNOLOGY CORPORATION





**EXISTING**

PHOTO

2

LOCATION

**BUENA VISTA ROAD (24mm Focal Length)**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 391 FEET**





**PROPOSED**

PHOTO

2

LOCATION

**BUENA VISTA ROAD (24mm Focal Length)**

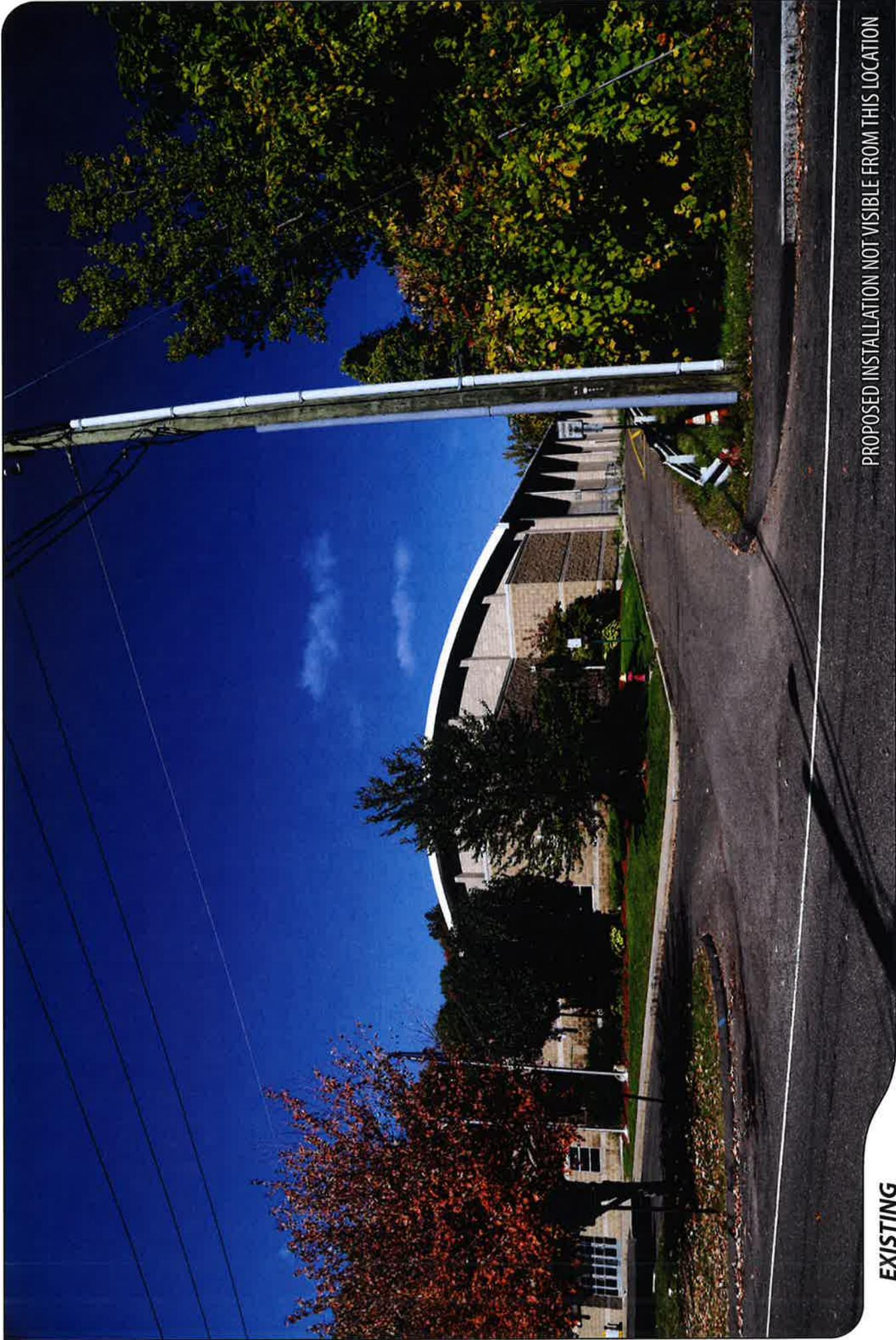
ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 391 FEET**





PROPOSED INSTALLATION NOT VISIBLE FROM THIS LOCATION

**EXISTING**

PHOTO

3

LOCATION

**BUENA VISTA ROAD (24mm Focal Length)**

ORIENTATION

**NORTHWEST**

DISTANCE TO SITE

**+/- 388 FEET**



ALL-POINTS  
TECHNOLOGY CORPORATION



# **ATTACHMENT 6**

General Power Density

Site Name: Farmington SC 1 CT  
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
VZW AWS	2145	1	595	595	44.9	0.1061	1.0	10.61%

**Total Percentage of Maximum Permissible Exposure**

\* 10.61%

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

# **ATTACHMENT 7**

FARMINGTON\_SC\_1\_CT\_Airspace\_report.txt  
\*\*\*\*\*  
\* Federal Airways & Airspace \*  
\* Summary Report: New Construction \*  
\* Antenna Structure \*  
\*\*\*\*\*

Airspace User: Mark Brauer

File: FARMINGTON\_SC\_1\_CT

Location: Hartford, CT

Latitude: 41°-45'-2.638" Longitude: 72°-46'-5.397"

SITE ELEVATION AMSL.....170 ft.

STRUCTURE HEIGHT.....48 ft.

OVERALL HEIGHT AMSL.....218 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: 30777.18 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: 33281.18 RE: 201.6

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

FARMINGTON\_SC\_1\_CT\_Airspace\_report.txt

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 IDENT TYP NAME	BEARING To FACIL	RANGE IN NM	DELTA ARP FAA ELEVATION IFR
OCT5 HEL ST FRANCIS HOSPITAL No Impact to Private Landing Facility Structure is beyond notice limit by 15780 feet.	65.41	3.42	+34
OCT9 HEL HARTFORD HOSPITAL No Impact to Private Landing Facility Structure is beyond notice limit by 19487 feet.	86.8	4.03	+7
CT73 HEL SOUTH MEADOWS No Impact to Private Landing Facility Structure is beyond notice limit by 22039 feet.	248.05	4.45	+18
CT06 HEL DELTA ONE No Impact to Private Landing Facility Structure is beyond notice limit by 27507 feet.	64.62	5.35	+197

AIR NAVIGATION ELECTRONIC FACILITIES

APCH BEAR	FAC IDNT	ST TYPE	AT FREQ	VECTOR	DIST (ft)	DELTA ELEVA ST	LOCATION	GRND ANGLE
	BDL	RADAR	ON	18.81	72315	-18 CT	BRADLEY INTL	-.01
	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.							
	HFD	VOR/DME	R	114.9	123.61	72327	-631 CT HARTFORD	-.5
	BDL	VORTAC	D	109.0	17.35	72647	+58 CT BRADLEY	.05
	BAF	VORTAC	R	113.0	5.37	150512	-49 MA BARNES	-.02
	MAD	VOR/DME	R	110.4	172.58	160550	-2 CT MADISON	0.00
	CEF	VORTAC	R	114.0	21.92	175597	-23 MA WESTOVER	-.01
	HVN	VOR/DME	R	109.8	190.17	180833	+212 CT NEW HAVEN	.07
	CTR	VOR/DME	I	115.1	346.02	203051	-1382 MA CHESTER	-.39

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: WTIC @ 4252 meters.

FARMINGTON\_SC\_1\_CT\_Airspace\_report.txt

Airspace® Summary Version 15.9.401

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10-01-2015  
09:20:10

# **ATTACHMENT 8**

October 22, 2015

*Via Certificate of Mailing*

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 56 Buena Vista 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 56 Buena Vista Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside an 18-inch diameter unipole tower attached to the roof of the Veterans Ice Arena building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside 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.

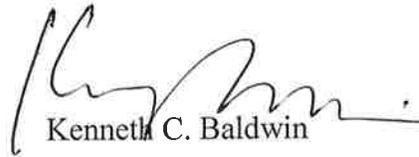
14203900-v1

# Robinson + Cole

Scott Slifka, Mayor  
October 22, 2015  
Page 2

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

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

October 22, 2015

*Via Certificate of Mailing*

Patrick G. Alair, Esq.  
Town Attorney  
Town of West Hartford  
50 South Main Street  
West Hartford, CT 06107

**Re: Proposed Installation of a “Small Cell” Telecommunications Facility at 56 Buena Vista Road, West Hartford, Connecticut**

Dear Mr. Alair:

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 56 Buena Vista Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside an 18-inch diameter unipole tower attached to the roof of the Veterans Ice Arena building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside 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.

14203905-v1

# Robinson + Cole

Patrick G. Alair  
October 22, 2015  
Page 2

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

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

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

October 22, 2015

*Via Certificate of Mailing*

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

Re: **Proposed Installation of a “Small Cell” Telecommunications Facility at 56 Buena Vista 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 56 Buena Vista Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside an 18-inch diameter unipole tower attached to the roof of the Veterans Ice Arena building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside 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.

14225954-v1

# Robinson + Cole

Todd Dumais  
October 22, 2015  
Page 2

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

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

# **ATTACHMENT 9**

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

October 22, 2015

*Via Certificate of Mailing*

«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 56 Buena Vista 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 56 Buena Vista Road, West Hartford (the “Property”). The “small cell” facility will consist of a single canister-type antenna and a remote radio head concealed inside an 18-inch diameter unipole tower attached to the roof of the Veterans Ice Arena building. The unipole will resemble an exhaust stack. Equipment associated with the “small cell” will be located inside the building. A copy of Cellco’s Petition is 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.

October 22, 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

KCB/kmd  
Attachment

**CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS**

**ABUTTING PROPERTY OWNERS**

**56 BUENA VISTA DRIVE, WEST HARTFORD, CONNECTICUT**

	<b>Property Address</b>	<b>Owner's and Mailing Address</b>
1.	37 Buena Vista Road	Town of West Hartford West Hartford Golf and Cornerstone 50 South Main Street West Hartford, CT 06107
2.	1 Common Drive	Kam T. Koo 1 Common Drive West Hartford, CT 06107
3.	3 Common Drive	Leonid Zeygerman and Zisus Tatyana 3 Common Drive West Hartford, CT 06107
4.	5 Common Drive	Robert R. Carroll and Deborah Cawley 5 Common Drive West Hartford, CT 06107
5.	7 Common Drive	Kevin F. Patrucco 7 Common Drive West Hartford, CT 06107
6.	9 Common Drive	Peter T. Canning 9 Common Drive West Hartford, CT 06107
7.	11 Common Drive	Sihui Liu 11 Common Drive West Hartford, CT 06107
8.	13 Common Drive	Ricardo Maldonado and Angelica Valentin-Colon 13 Common Drive West Hartford, CT 06107
9.	15 Common Drive	Ramamohan Maddur and Neeraja Narava 15 Common Drive West Hartford, CT 06107

	<b>Property Address</b>	<b>Owner's and Mailing Address</b>
10.	17 Common Drive	Arleen E. Clatterbuck 17 Common Drive West Hartford, CT 06107
11.	19 Common Drive	Jose and Elisha Olinda 19 Common Drive West Hartford, CT 06107
12.	21 Common Drive	Sudhakar Javangula and Chandana Maddela 21 Common Drive West Hartford, CT 06107
13.	23 Common Drive	Jeffrey and Barbara Linden 23 Common Drive West Hartford, CT 06107
14.	25 Common Drive	Teresa M. Stanton 25 Common Drive West Hartford, CT 06107
15.	27 Common Drive	Barbara D. and Jennifer L. Barbieri 27 Common Drive West Hartford, CT 06107
16.	1263 Farmington Avenue	Anna George 1263 Farmington Avenue West Hartford, CT 06107
17.	1255 Farmington Avenue	Connecticut Light & Power Attn: Property Tax Department P.O. Box 270 Hartford, CT 06141-0270
18.	2181 Boulevard	Carl R. Brouillette 2181 Boulevard West Hartford, CT 06107
19.	23 Shady Brook Drive	Paul R. and Beverly S. Truebig 23 Shady Brook Drive West Hartford, CT 06107
20.	27 Shady Brook Drive	Christopher W. Clarke 27 Shady Brook Drive West Hartford, CT 06107

	<b>Property Address</b>	<b>Owner's and Mailing Address</b>
21.	26 Buena Vista Road	Soloman Schechter Day School of Greater Hartford Inc. 26 Buena Vista Road West Hartford, CT 06107