

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:

A PETITION OF CELLCO PARTNERSHIP
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 1550 SULLIVAN AVENUE, SOUTH
WINDSOR, CONNECTICUT

PETITION NO. _____

JULY 13, 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 facility on the roof of the South Windsor Public Library at 1550 Sullivan Avenue in South Windsor, Connecticut (the “Property”). The Property is owned by the Town of South Windsor. Cellco has designated this site as its “South Windsor SC2 Facility”.

II. Factual Background

The Property is a 13.39-acre parcel in South Windsor’s Rural Residential (RR) zone district and is surrounded by residential and commercial land uses. (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 South Windsor and throughout the State of Connecticut. Initially, the proposed South Windsor SC2 Facility is proposed to provide wireless service in Cellco's 2100 MHz frequency range only. The South Windsor SC2 Facility will provide capacity relief to Cellco's network in commercial and residential areas along Routes 30 and 194 in the center of South Windsor and to the South Windsor Town Hall and Public Library.

III. Proposed "Small Cell" Facility

The proposed South Windsor SC2 Facility would consist of a small tower mast, supporting a single, canister-type "small cell" antenna and remote radio head (RRH), attached to the mechanical penthouse on the roof of the building. The tower mast, antenna and RRH will be concealed by inside a faux chimney structure designed to match the brick façade of the Town library. The faux chimney will extend to an overall height of 44.5 feet above ground level, approximately six (6) feet above height of the mechanical penthouse. Cellco's radio equipment will be located on the ground on a 6-foot by 8-foot concrete pad along the east side of the building. The equipment pad will be surrounded by an 6-foot tall vinyl fence. Project Plans for the proposed small cell facility are included in Attachment 2. Specifications for Cellco's "small cell" antenna and RRH are included in Attachment 3.

IV. Discussion

A. The Proposed Facility Modifications 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 towers 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 cellular telecommunication towers “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 “small cell” canister antenna and RRH on a tower mast attached to the roof of the building and radio equipment on the ground, will not involve a significant alteration in the physical and environmental characteristics of the Property. With the exception of the concrete pad and security fence surrounding the equipment, none of Cellco’s improvements will result in any ground disturbance at the Property. Access to the “small cell” facility components would extend from Sullivan Road over an existing paved driveway and parking area on the Property.

2. Inland Wetlands

The proposed equipment area, located on the east side of the building, would be located more than 150 feet from the nearest wetland, in a wooded area to the east of the library building on the Property. Cellco does not anticipate that any of its facility-related improvements will impact this wetland area. (See Attachment 4, Wetland Inspection memorandum for details).

3. Visual Effects

The visibility of the proposed “small cell” installation would be limited to locations within approximately 750 feet of the building. The faux chimney concealment structure will appear as a part of the building, limiting, if not eliminating altogether, the visual impact of the small cell installation. Overall, the proposed small cell facility will not be highly visible nor will it have a significant impact on aesthetics in the area. See Limited Visual Assessment included in Attachment 5.

4. FCC Compliance

Radio frequency (“RF”) emissions from the proposed installation will be far below the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 6 is a General Power Density table including a calculation that demonstrates that the proposed “small cell” facility will operate well within the RF emission standards accepted by the FCC.

5. FAA Summary Report

Included in Attachment 7 is a Federal Airways & Airspace Summary Report verifying that the small cell facility pole 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 Town, Property Owner and Abutting Landowners

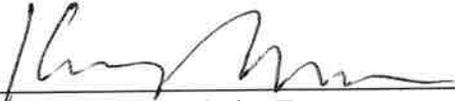
On July 13, 2015, a copy of this Petition was sent to South Windsor’s Town Manager Matthew B. Galligan. The Town is the owner of the Property. Included in Attachment 8 is a copy of the letter sent to Mr. Galligan. A copy of this Petition was also sent to the owners of land that abuts the Property. A sample abutter’s letter and the list of those abutting landowners who were sent copies of the Petition are included in Attachment 9.

V. Conclusion

Based on the information provided above, Celco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a “small cell” antenna on the roof of the building at the Property 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.

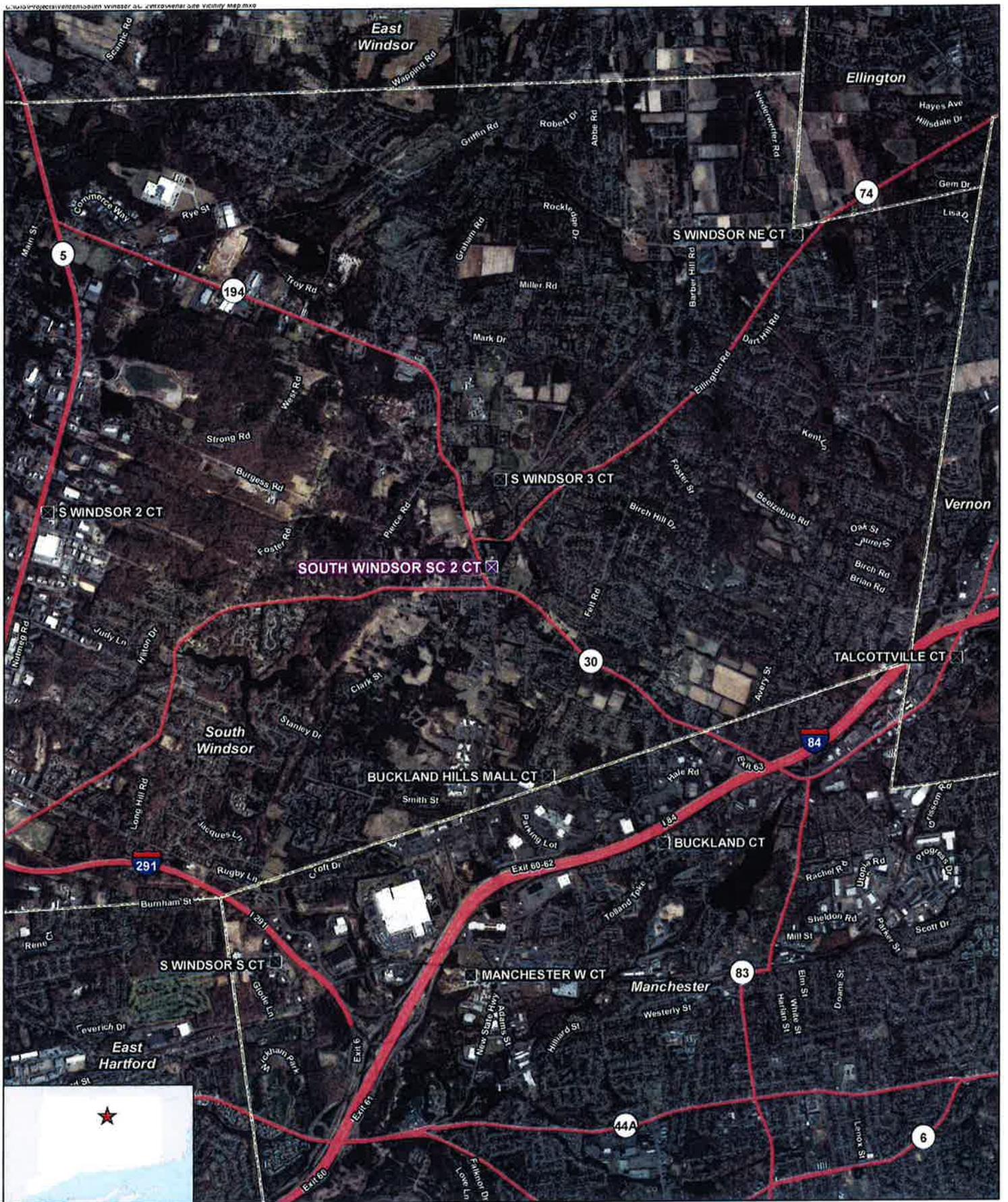
Respectfully submitted,

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



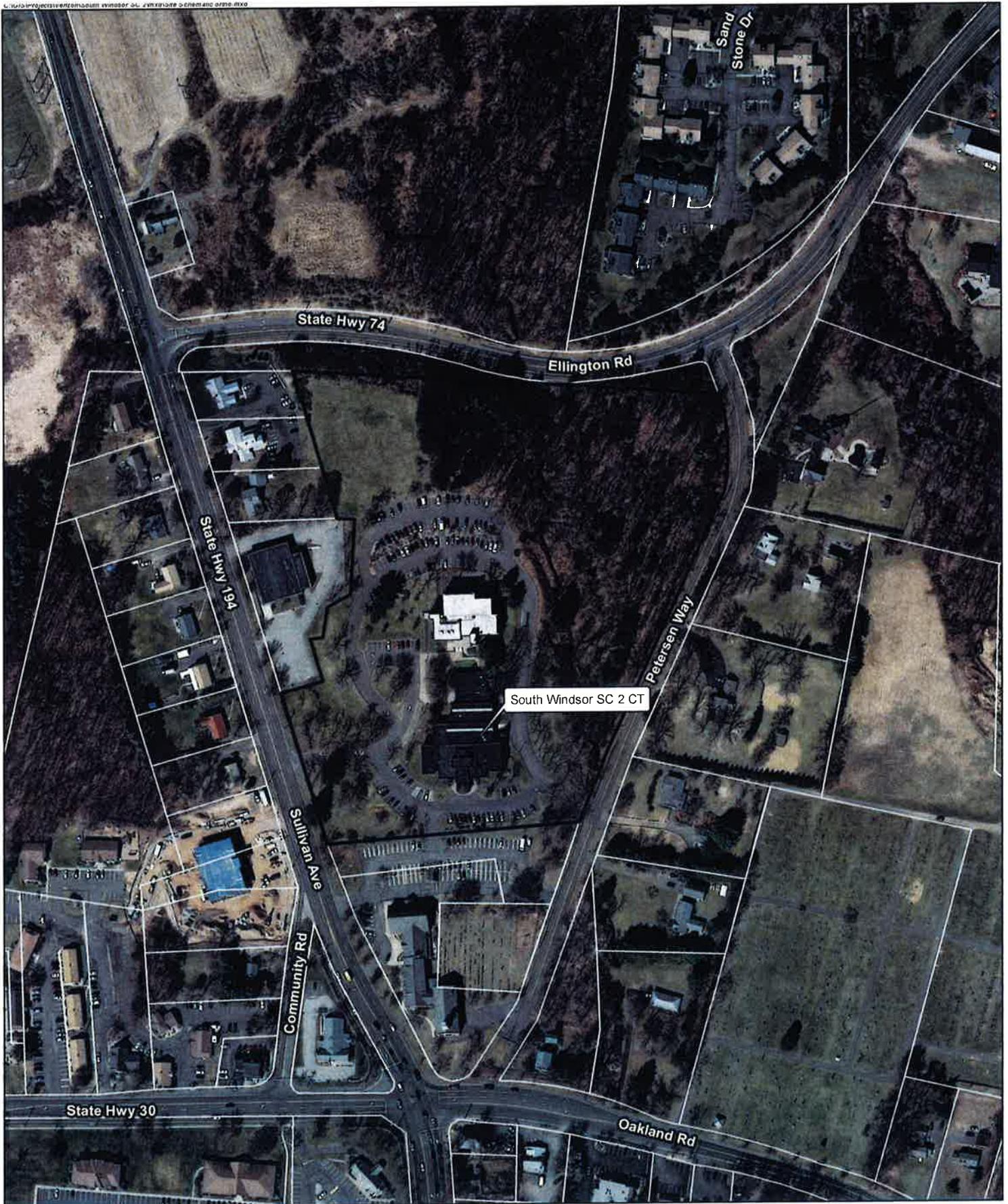
- Legend**
- Proposed Verizon Wireless Facility
 - Surrounding Verizon Wireless Facilities
 - Subject Property
 - Municipal Boundary

Site Vicinity Map

Proposed Small Cell Installation
 South Windsor SC 2 CT
 South Windsor Public Library
 1550 Sullivan Avenue
 South Windsor, Connecticut

Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 4,000 feet
 Map Date: November 2014





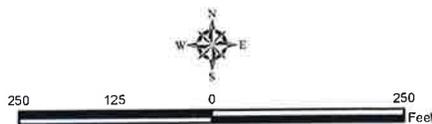
Legend

-  Subject Property
-  Approximate Parcel Boundary (CTDEEP GIS)

Site Schematic

Proposed Small Cell Installation
 South Windsor SC 2 CT
 South Windsor Public Library
 1550 Sullivan Avenue
 South Windsor, Connecticut

Map Notes:
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 250 feet
 Map Date: November 2014



ATTACHMENT 2

Cellco Partnership

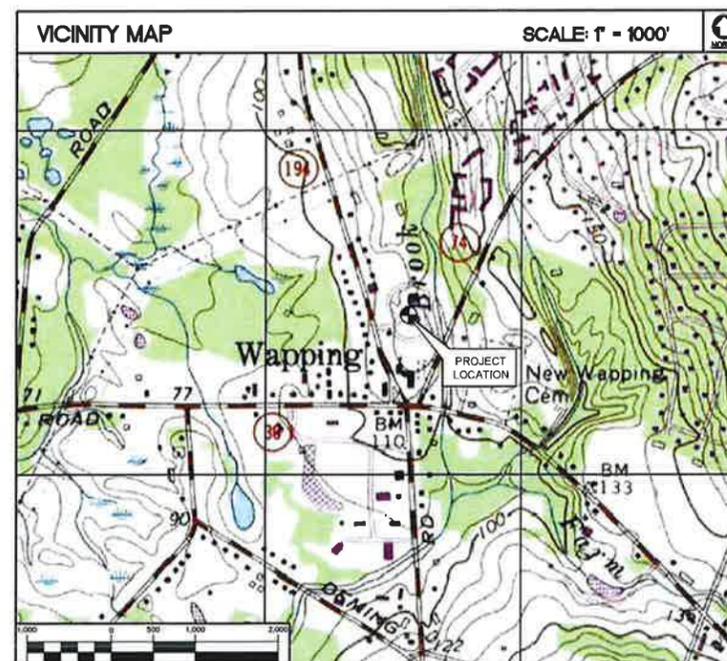
d.b.a. **verizon** wireless

SOUTH WINDSOR SC2
1550 SULLIVAN AVE.
SOUTH WINDSOR, CT 06074

SITE DIRECTIONS	
FROM: 99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	TO: 1550 SOUTH WINDSOR SOUTH WINDSOR, CT 06074
1. Head northeast on E River Dr	344 FT
2. Turn left onto the CT-2 E ramp to Norwich	0.2 MI
3. Merge onto I-84 E	5.7 MI
4. Take exit 62 for Buckland Street	1.1 MI
5. Turn left onto Buckland St	1.9 MI
6. Continue onto CT-194 W destination will be on the right	0.1 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 TO BE LOCATED AT GRADE IN 6'x8' LEASE AREA WITHIN A 6' TALL VINYL FENCE.
2. A TOTAL OF ONE (1) OMNI-DIRECTIONAL ANTENNA IS PROPOSED TO BE MOUNTED TO THE EXTERIOR WALL OF EXISTING MECHANICAL PENTHOUSE WITHIN A PROPOSED RF TRANSPARENT FAUX CHIMNEY AT A CENTERLINE ELEVATION OF ±43.0' A.G.L.
3. THE PROPOSED ELECTRICAL UTILITIES SHALL BE ROUTED ABOVE FINISHED CEILING FROM EXISTING ELECTRICAL DEMARC WITHIN EXISTING ELECTRICAL ROOM AT GROUND LEVEL LOCATION TO PROPOSED EQUIPMENT CABINET. THE PROPOSED FIBER TELCO UTILITY SHALL BE ROUTED ABOVE FINISHED CEILING FROM EXISTING TELCO DEMARC LOCATED IN LOWER LEVEL MECHANICAL ROOM.
4. FINAL DESIGN FOR ANTENNA MOUNT SHALL BE INCLUDED IN THE CONSTRUCTION PLANS.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.

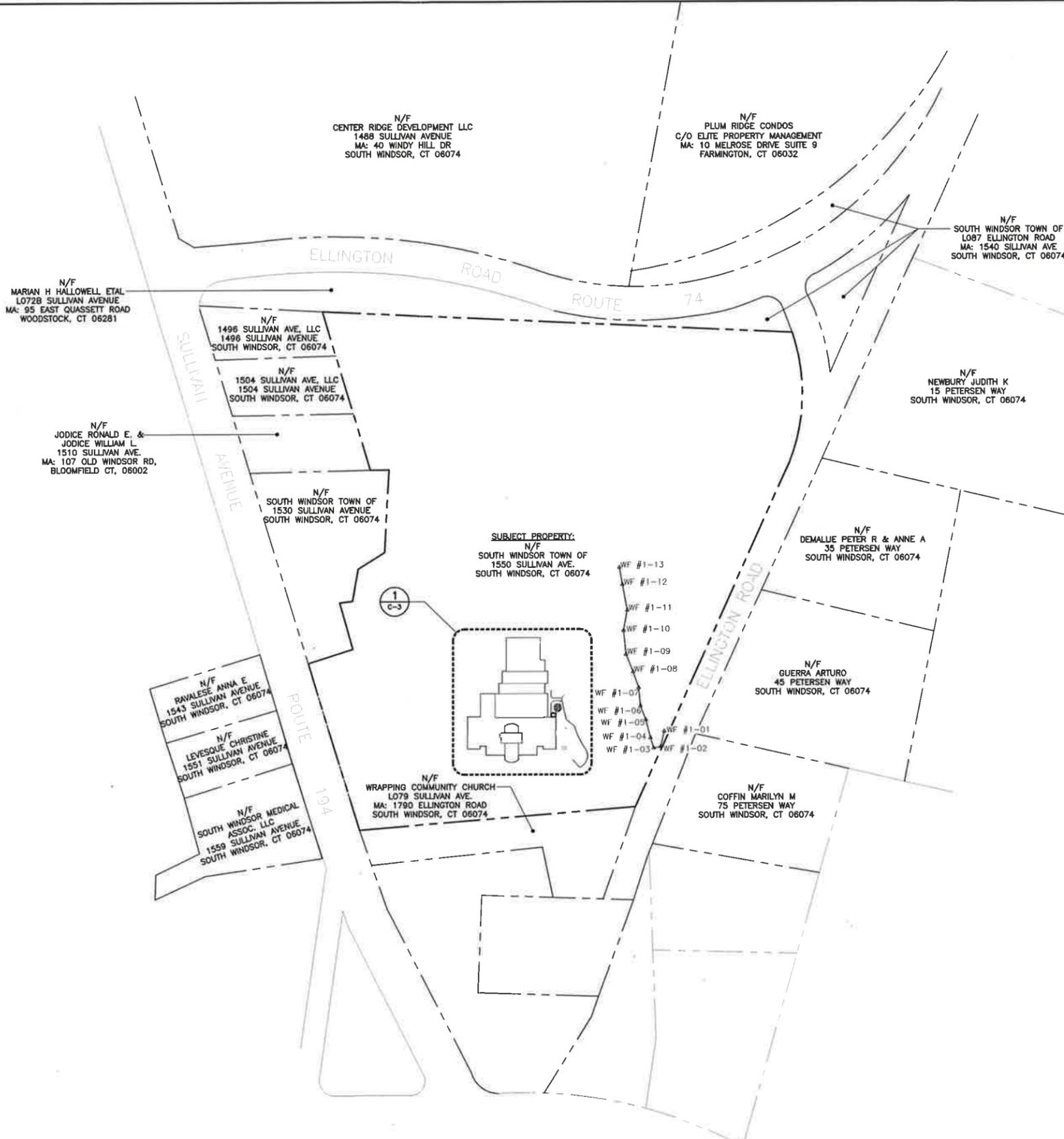
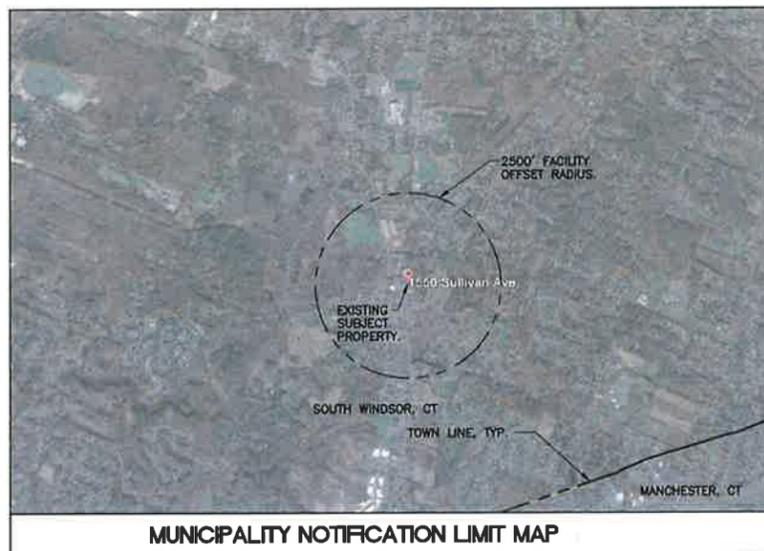


PROJECT SUMMARY	
SITE NAME:	SOUTH WINDSOR SC2
SITE ADDRESS:	1550 SULLIVAN AVE. SOUTH WINDSOR, CT 06074
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELCO PARTNERSHIP (860) 803-8219
SITE COORDINATES:	LATITUDE: 41°-49'-42.945"N LONGITUDE: 72°-33'-10.727"W GROUND ELEVATION: ±121.6'AMSL
	COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES LLC, DATED NOVEMBER 11, 2014.

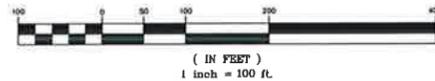
SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	4
C-1	ABUTTERS MAP	4
C-2	PARTIAL ROOF / SITE PLAN AND ELEVATION	4

(203) 488-0580 (203) 488-8587 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	
Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY SOUTH WINDSOR SC2 1550 SULLIVAN AVE. SOUTH WINDSOR, CT 06074	
DATE: 12/10/14 SCALE: AS NOTED JOB NO. 14218.000	TITLE SHEET T-1 Sheet No. 1 of 3

REV.	DATE	DRAWN BY	CHKD BY	DESCRIPTION
4	07/13/15	DNA	MNR	ISSUED FOR CSC
3	07/09/15	DNA	MNR	ISSUED FOR CSC - UPDATED ABUTTER INFORMATION
2	07/09/15	DNA	MNR	ISSUED FOR CSC
1	05/27/15	DNA	MNR	ISSUED FOR CSC - UPDATED TO ADD WETLANDS/ ABUTTERS MAP
0	12/17/14	DNA	DMJ	ISSUED FOR CSC - CUBBY REVIEW

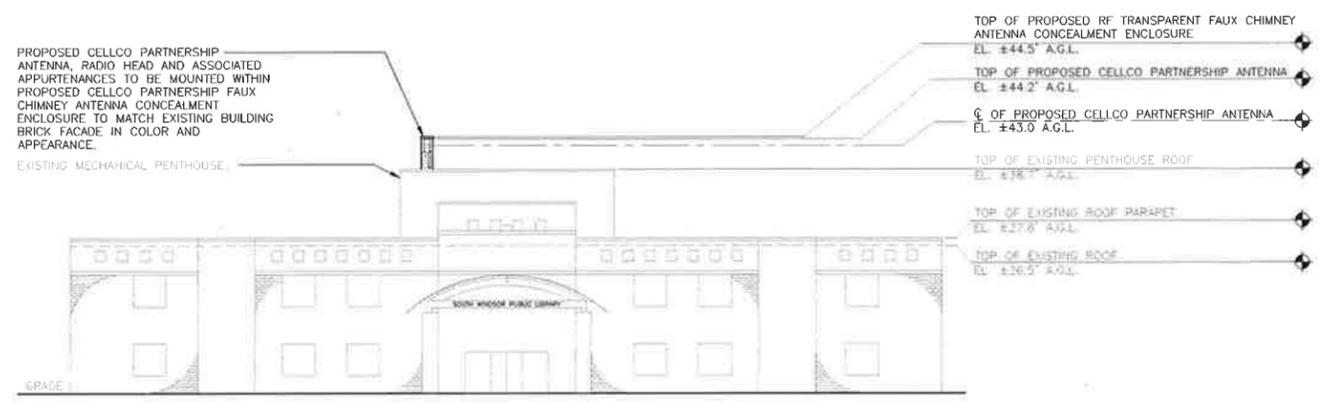


1
C-1
ABUTTERS MAP
SCALE: 1" = 100'

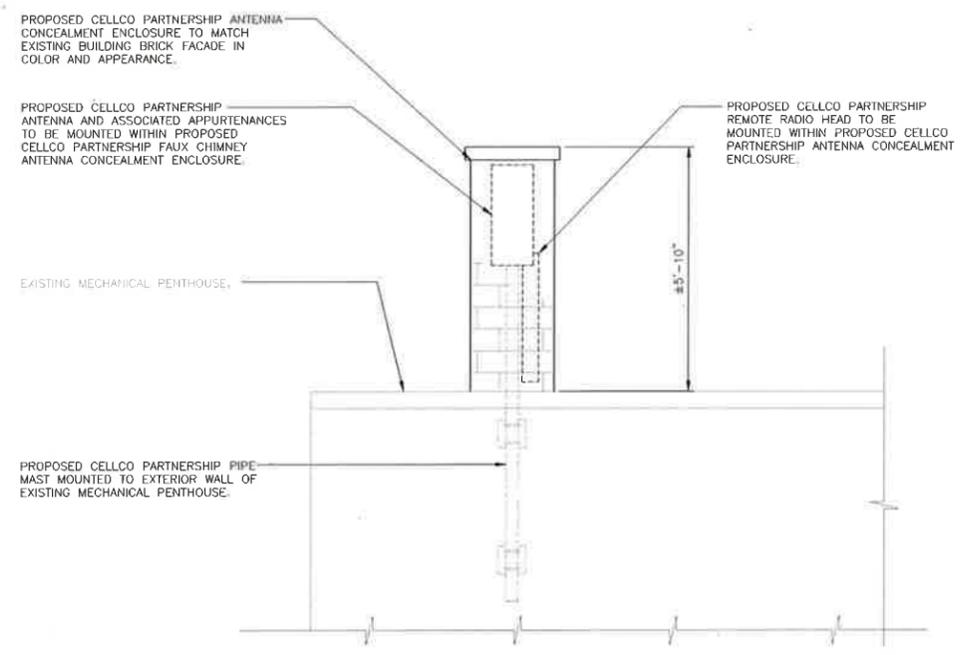


<p>PROFESSIONAL ENGINEER SEAL</p> <p>Cellco Partnership d/b/a. Verizon Wireless</p> <p>CENTEK engineering Centered on solutions™ (203) 468-0500 (203) 468-8807 Fax 132 North Bedford Road Branford, CT 06405 www.CentekEng.com</p>	
<p>Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY SOUTH WINDSOR SC2 1550 SULLIVAN AVE SOUTH WINDSOR, CT 06074</p>	
<p>DATE: 12/10/14 SCALE: AS NOTED JOB NO. 14218.000</p>	
<p>ABUTTERS MAP</p>	
<p>C-1 Sheet No. 2 of 3</p>	

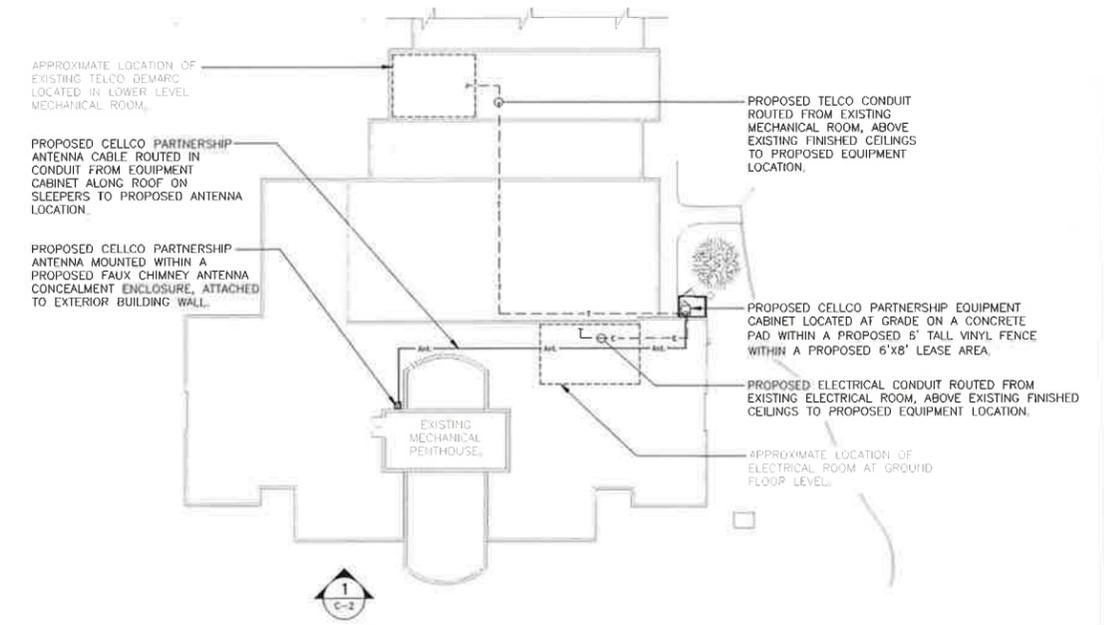
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
4	07/13/15	DRA	HMR	ISSUED FOR CSC
3	07/08/15	DRA	HMR	ISSUED FOR CSC - UPDATED ABUTTER INFORMATION
2	07/07/15	DRA	HMR	ISSUED FOR CSC - UPDATED TO ADD WETLANDS/ ABUTTERS MAP
1	05/27/15	DRA	HMR	ISSUED FOR CSC - CLIENT REVIEW
0	12/11/14	DRA	DMD	ISSUED FOR CSC - CLIENT REVIEW



2 SOUTH ELEVATION
 C-2 SCALE: 1" = 15'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 15 ft.



3 ANTENNA MOUNTING DETAIL
 C-2 SCALE: 1/2" = 1'-0"



1 PARTIAL SITE/ ROOF PLAN
 C-2 SCALE: 1" = 30'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
4	07/13/15	DRA	HMR	ISSUED FOR CSC - UPDATED ASBUTER INFORMATION
3	07/08/15	DRA	HMR	ISSUED FOR CSC - UPDATED ASBUTER INFORMATION
2	07/07/15	DRA	HMR	ISSUED FOR CSC - UPDATED TO ADD WETLANDS/ ABUTTERS MAP
1	06/27/15	DRA	HMR	ISSUED FOR CSC - CLIENT REVIEW
0	12/11/14	DRA	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership
 d/b/a. Verizon Wireless

CENTEK engineering
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Cellco Partnership d/b/a Verizon Wireless
 WIRELESS COMMUNICATIONS FACILITY
SOUTH WINDSOR SC2
 1550 SULLIVAN AVE.
 SOUTH WINDSOR, CT 06074

DATE: 12/10/14
 SCALE: AS NOTED
 JOB NO. 14218.000

PARTIAL ROOF/
 SITE PLAN AND
 ELEVATION

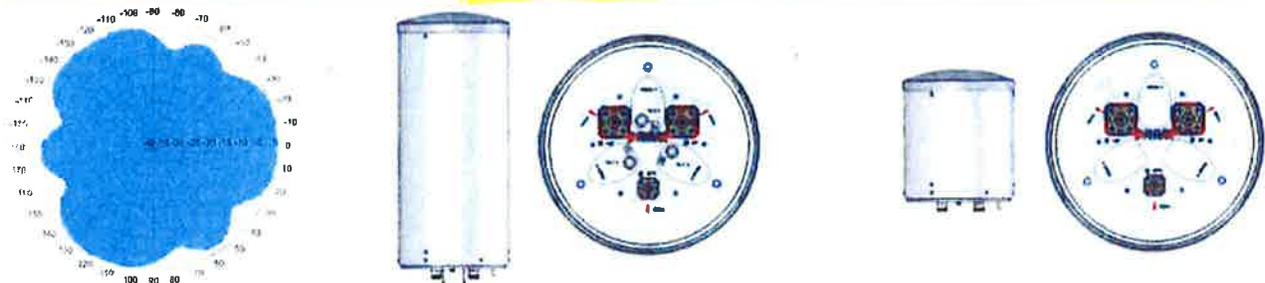
C-2
 Sheet No. 3 of 3

ATTACHMENT 3

Metro Cell Antennas with Internal Diplexer and GPS Antenna

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

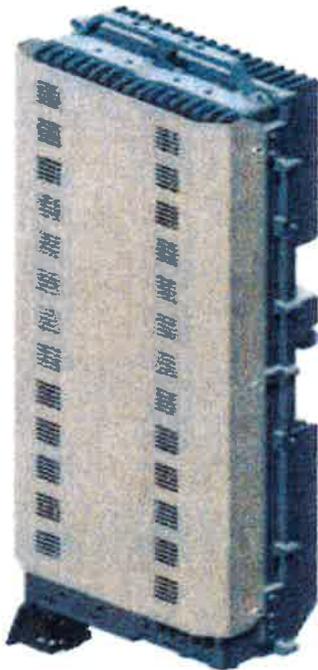
NH360QS-DG-F0M
NH360QT-DG-F0



ELECTRICAL SPECIFICATIONS										
Operating Frequency Range	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
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
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	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50
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)	330 (12.9)					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.

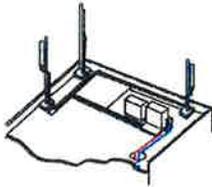
EASY INSTALLATION

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.

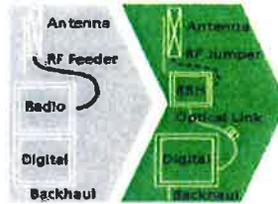
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

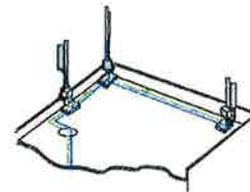
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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)

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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.....Alcatel-Lucent
AT THE SPEED OF IDEAS™



ATTACHMENT 4



WETLAND INSPECTION

April 8, 2015

APT Project No.: CT1414510

Prepared For: Verizon Wireless
99 East River Drive
East Hartford, CT 06108
Attn: James Sessions

Verizon Wireless Site Name: South Windsor SC 2

Site Address: 1550 Sullivan Avenue
South Windsor, Connecticut

Date(s) of Investigation: 4/3/2015

Field Conditions: **Weather:** cloudy, mid 50's
Soil Moisture: saturated to inundated

Wetland/Watercourse Delineation Methodology^{*}:

- Connecticut Inland Wetlands and Watercourses
- Connecticut Tidal Wetlands
- Massachusetts Wetlands
- U.S. Army Corps of Engineers

The wetlands inspection was performed by[†]:

Matthew Gustafson, Registered Soil Scientist

Enclosures: Wetland Delineation Field Form & Wetland Inspection Map

This report is provided as a brief summary of findings from APT's wetland investigation of the referenced study area that consists of proposed development activities and areas generally within 200 feet.[‡] APT is available to provide a more comprehensive wetland impact analysis upon receipt of site plans depicting the proposed development activities and surveyed location of identified wetland and watercourse resources.

^{*} Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

[†] All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

[‡] APT has relied upon the accuracy of information provided by Verizon Wireless and its contractors regarding proposed lease area and access road/utility easement locations for identifying wetlands and watercourses within the study area.

Attachments

- Wetland Delineation Field Form
- Wetland Inspection Map

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1	
Flag #'s:	WF 1-01 to 1-13	
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input checked="" type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: None		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Plum Gully Brook		
Comments: Well incised, sandy bottom with little to no bordering vegetated wetlands		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

DOMINANT PLANTS:

Asiatic Bittersweet* (<i>Celastrus orbiculatus</i>)	Box Elder (<i>Acer negundo</i>)
American Elm (<i>Ulmus americana</i>)	Fox Grape (<i>Vitis labrusca</i>)
Multiflora Rose* (<i>Rosa multiflora</i>)	Spicebush (<i>Lindera benzoin</i>)

GENERAL COMMENTS:

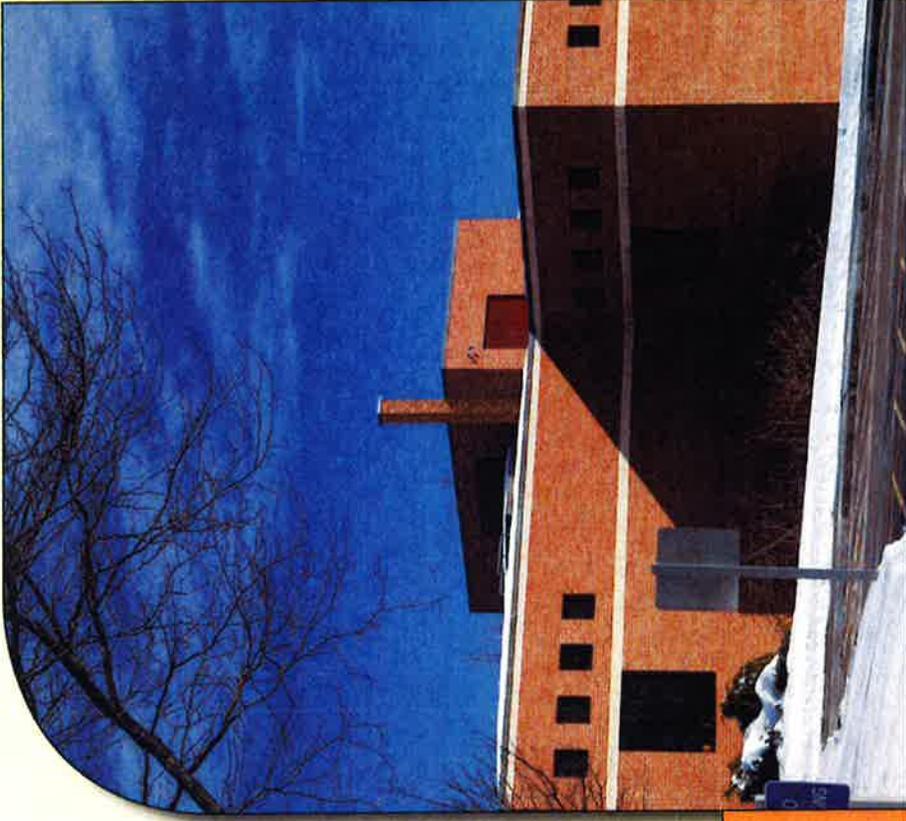
Plum Gully Brook exhibits narrow vegetated buffering with steep colluvium fill slopes and little to no bordering wetland resources/active floodplain. Indicators of anthropogenic influences include dense colonization by invasive plant species and an accumulation of foreign debris. Three stormwater outfalls empty into the watercourse within the delineated limits. The watercourse eventually drains south under a paved access road serving the South Windsor Public Library via a 15 foot wide box culvert.

The nearest development activities proposed by Verizon Wireless are approximately 155 feet west of delineated wetlands, beyond the 80 foot upland review area regulated by the South Windsor Inland Wetlands Commission.

ATTACHMENT 5

Limited Visual Assessments and Photo-Simulations

SOUTH WINDSOR SC2
1550 SULLIVAN AVE
SOUTH WINDSOR, CT 06074



Prepared in February 2015 by:
All-Points Technology Corporation, P.C.
3 Sadalebrook 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 1550 Sullivan Avenue (State Highway 194) in South Windsor, Connecticut (the "Property").

Project Setting

The Property is located in a mixed commercial and residential area, west of Sullivan Avenue and east of Petersen Way. The Property is currently improved with the South Windsor Public Library. The proposed Facility would include the installation of a single canister antenna enclosed within a radio-frequency ("RF") transparent faux chimney extending approximately six (6) feet above an existing mechanical penthouse on the building's roof. The faux chimney would be painted to match the color of the existing brick façade of the building. Associated equipment would be located at grade within an exterior, 6-foot by 8-foot fence-enclosure adjacent to the building's east wall.

Methodology

On February 11, 2015 APT personnel conducted a field reconnaissance to photo-document existing conditions. Three (3) nearby locations were selected to represent where the existing building is visible and depict proposed conditions with the proposed Facility installation. 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 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 small cell installation would be limited to locations within approximately 750 feet of the building. The antenna would be enclosed within an RF-transparent, faux chimney painted to match the color of the existing brick building façade, essentially appearing as an original part of the building. Based on the results of this assessment, it is APT's opinion that the proposed installation of Verizon Wireless equipment at the Property would not be highly visible or have a significant impact on aesthetics in the area.

Limitations

This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen. The photo-simulations provide a representation of the Facility under similar settings as those encountered during the field reconnaissance. Views of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the reconnaissance included mostly sunny skies and the photo-simulations presented in this report provide an accurate portrayal of the Facility during comparable conditions.

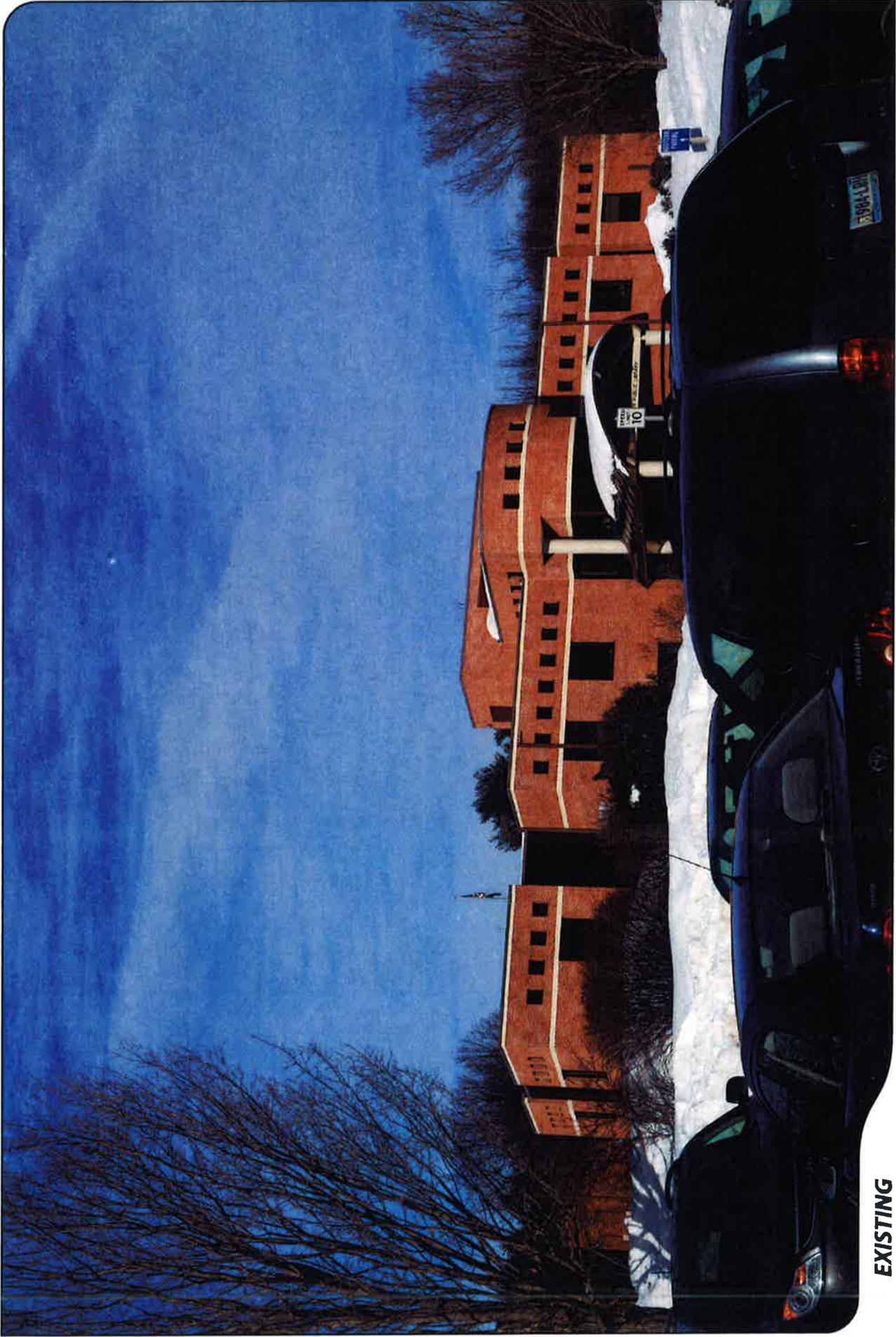
ATTACHMENTS



PHOTO LOG

- Legend**
-  Site
 -  Photo Location





EXISTING

PHOTO

1

LOCATION

WAPPING COMMUNITY CHURCH

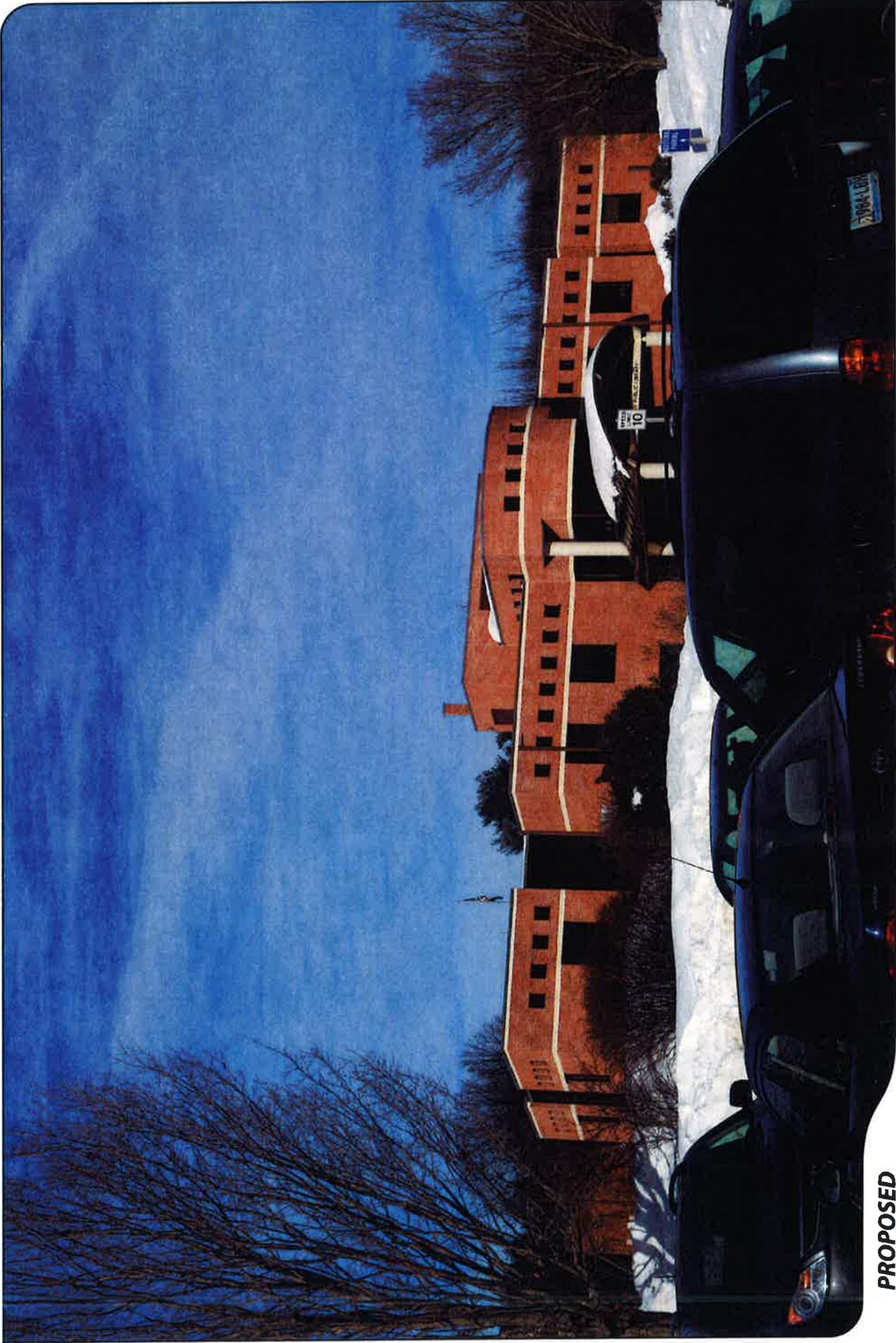
ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/-318 FEET





PROPOSED

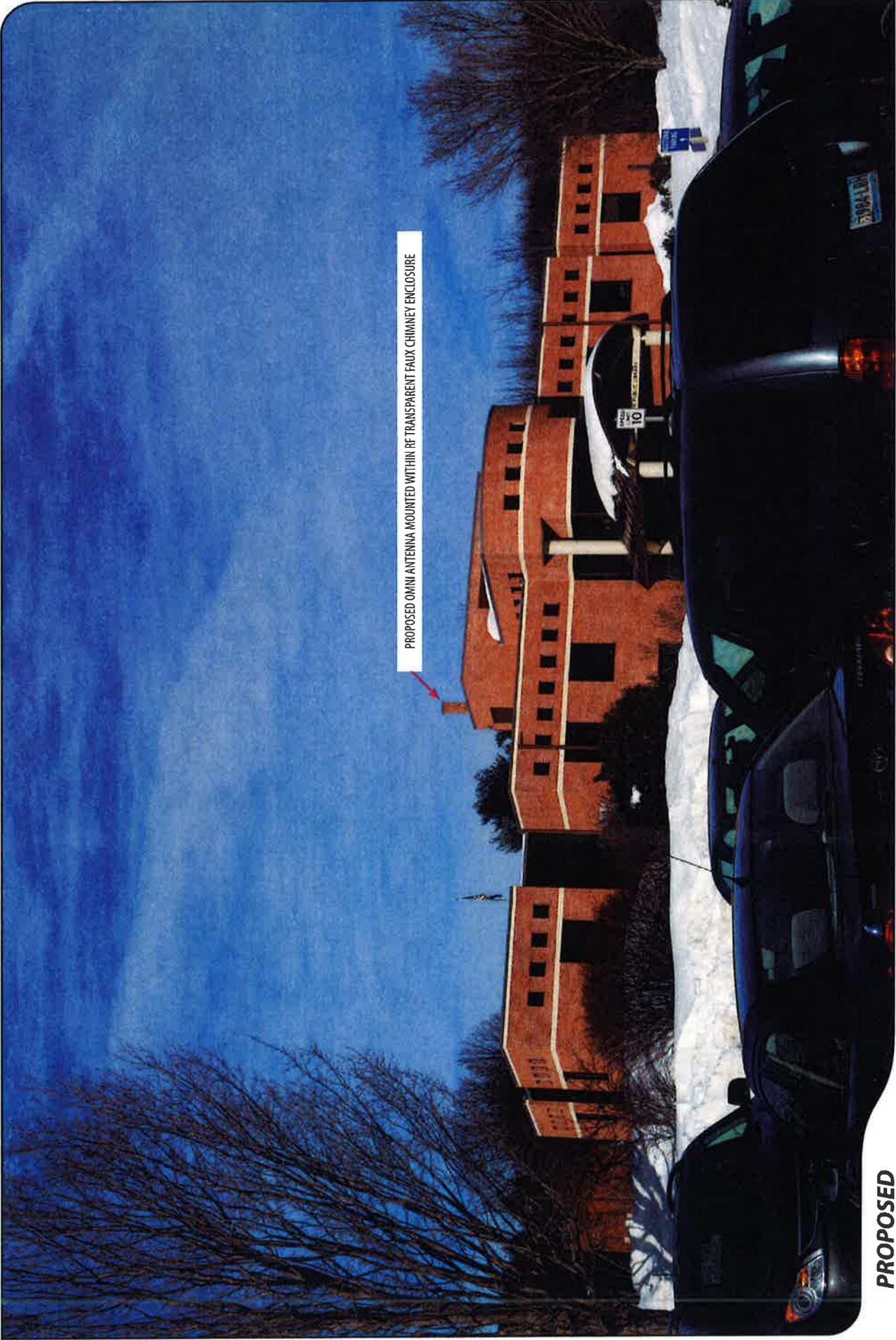
PHOTO
1

LOCATION
WAPPING COMMUNITY CHURCH

ORIENTATION
NORTHEAST

DISTANCE TO SITE
+/-318 FEET





PROPOSED OMNI ANTENNA MOUNTED WITHIN RF TRANSPARENT FAUX CHIMNEY ENCLOSURE

PROPOSED

PHOTO

1

LOCATION

WAPPING COMMUNITY CHURCH

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/-318 FEET



EXISTING

PHOTO

2

LOCATION

HOST PROPERTY

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 233 FEET



PROPOSED

PHOTO

2

LOCATION

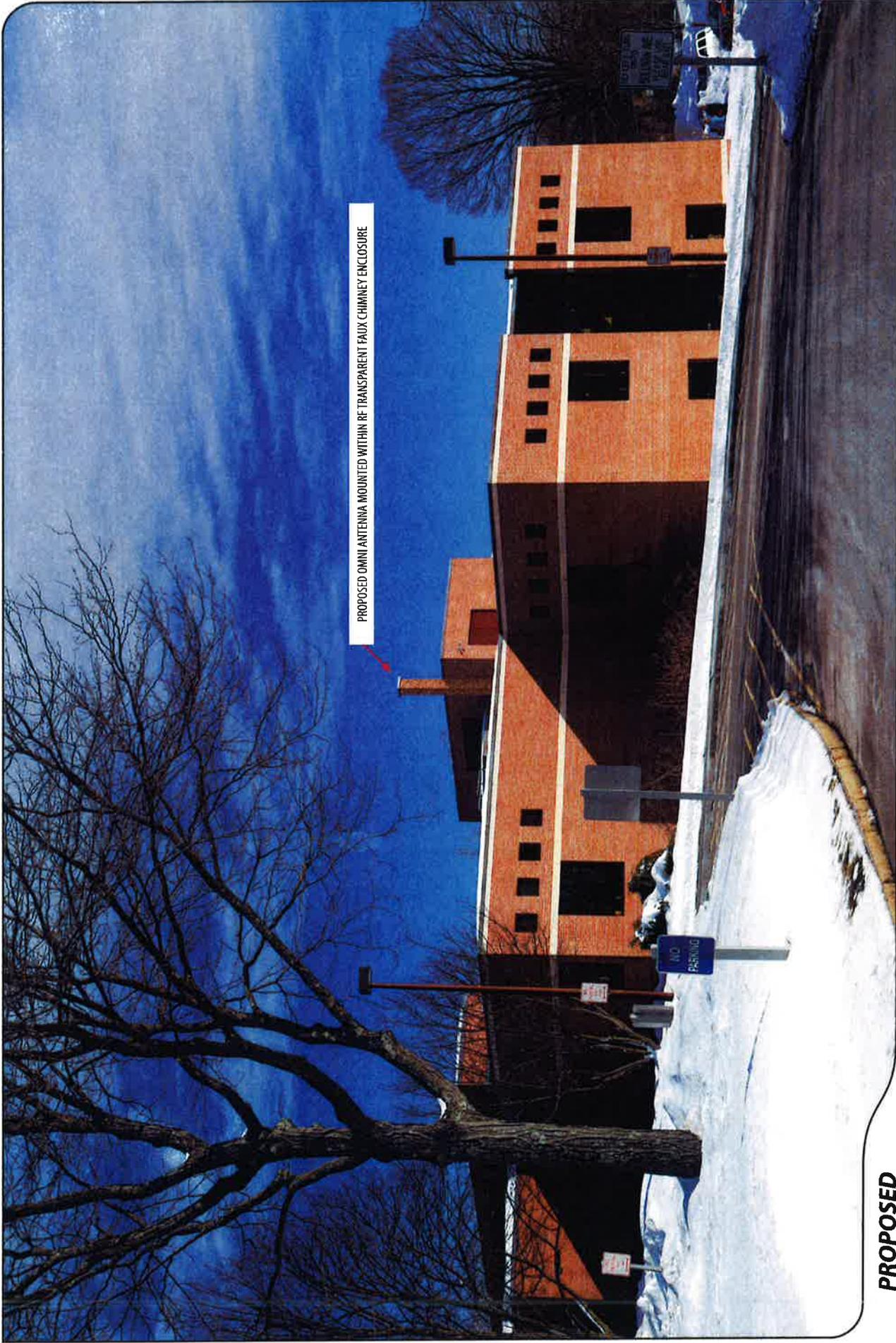
HOST PROPERTY

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 233 FEET



PROPOSED OMNI ANTENNA MOUNTED WITHIN RE TRANSPARENT FAUX CHIMNEY ENCLOSURE

PROPOSED

PHOTO

2

LOCATION

HOST PROPERTY

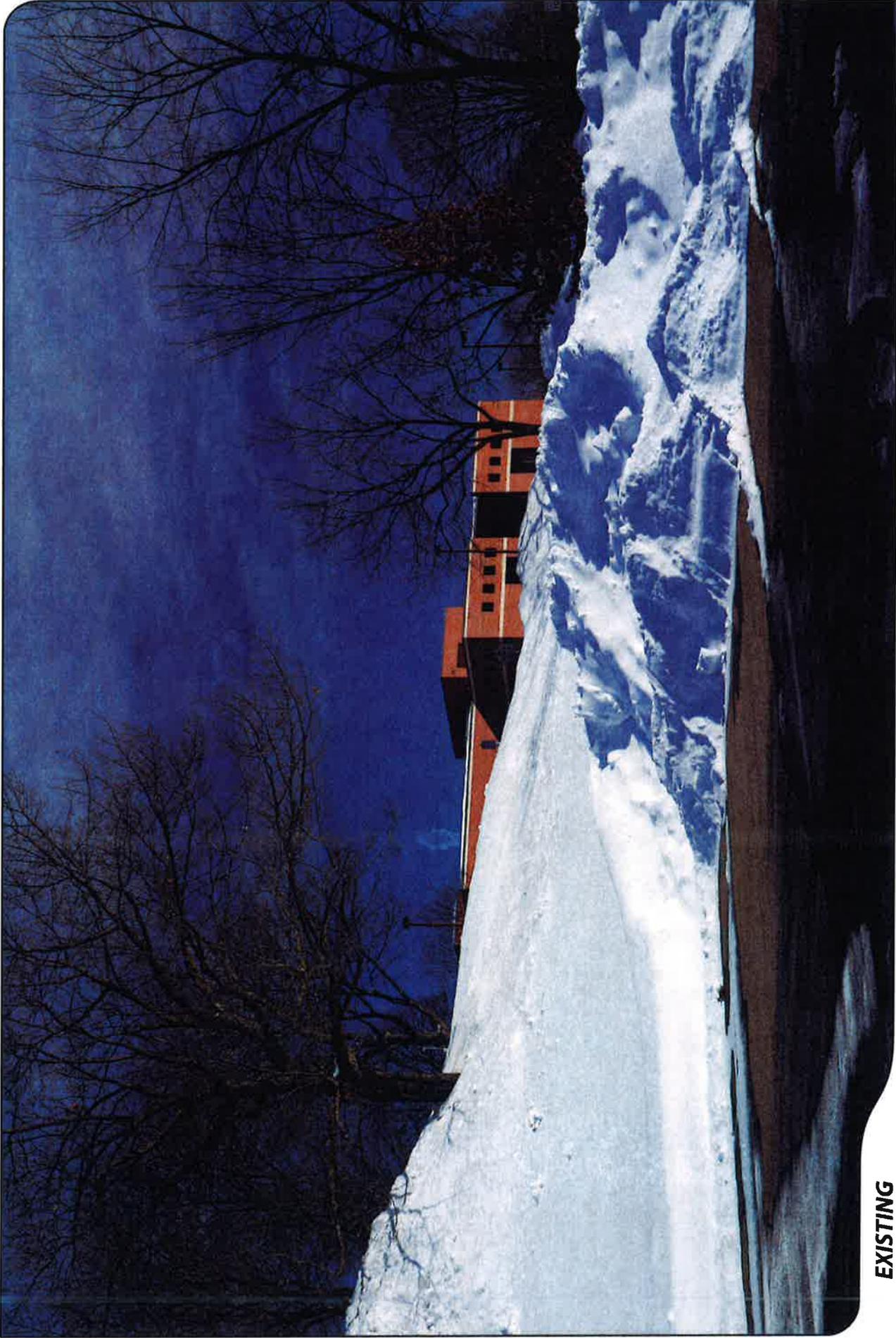
ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 233 FEET





EXISTING

PHOTO

3

LOCATION

SULLIVAN AVENUE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

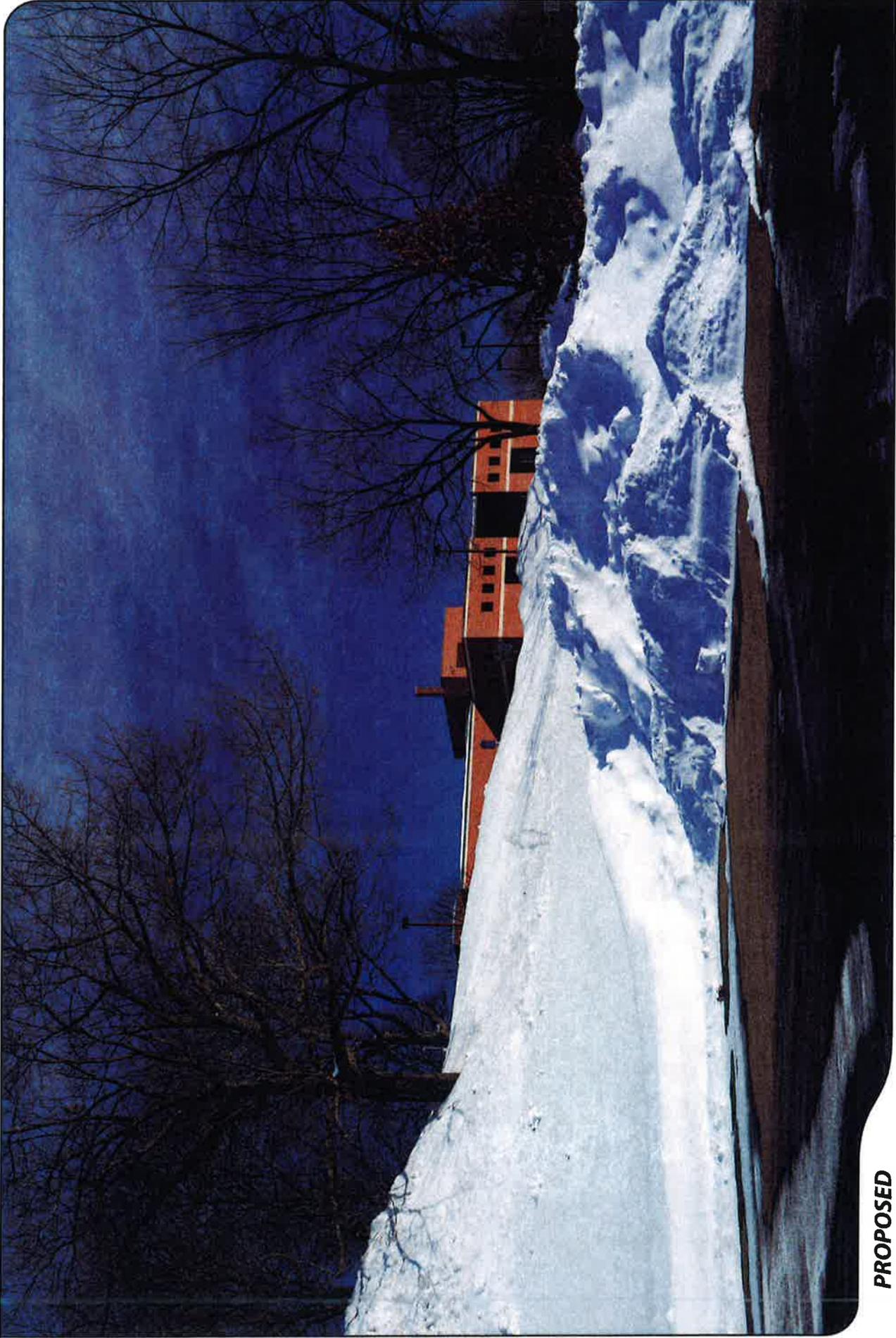
+/- 395 FEET



ALL-POINTS
TECHNOLOGY CORPORATION



VOTI ON



PROPOSED

PHOTO

3

LOCATION

SULLIVAN AVENUE

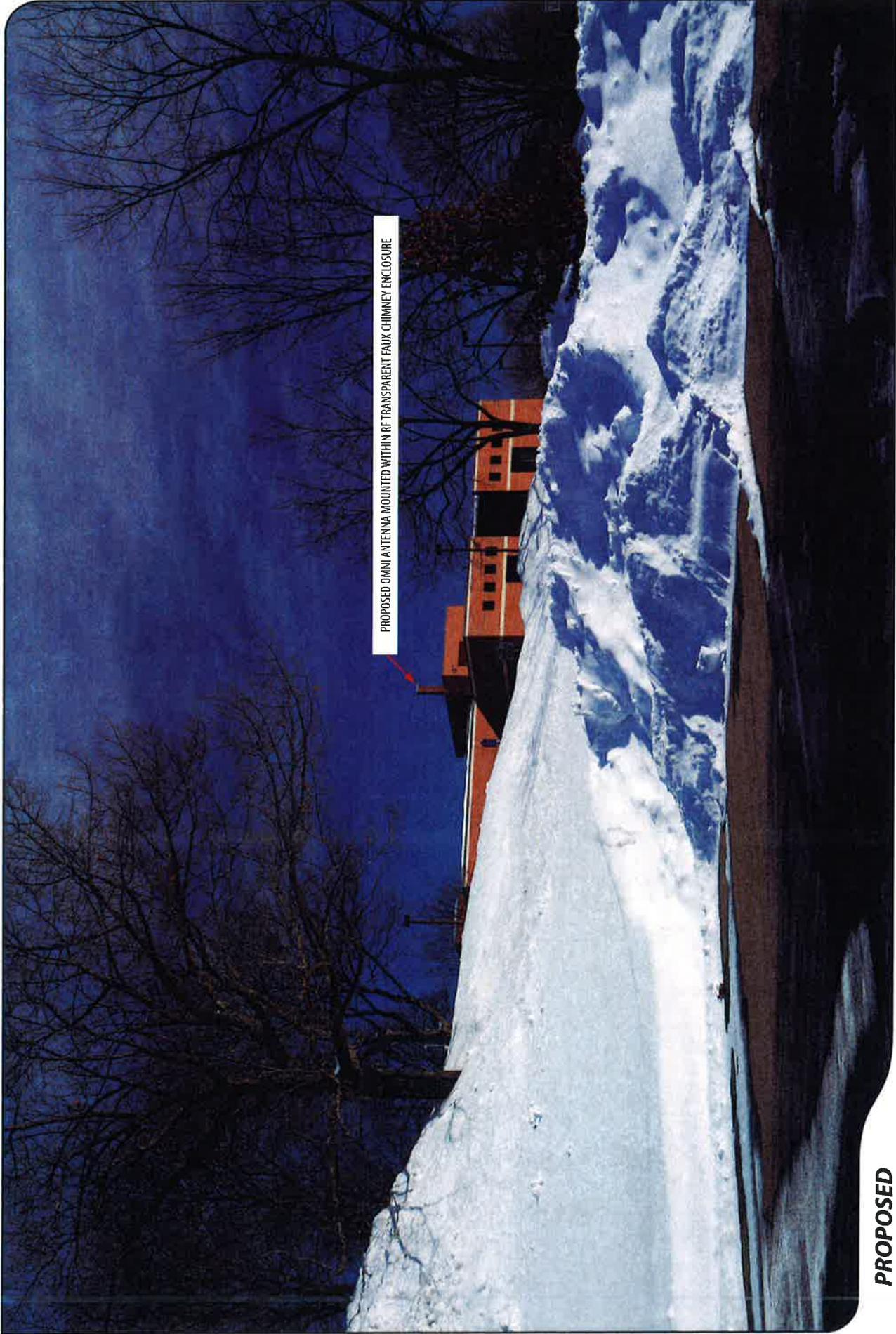
ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 395 FEET





PROPOSED OMNI ANTENNA MOUNTED WITHIN RF TRANSPARENT FAUX CHIMNEY ENCLOSURE

PROPOSED

PHOTO

3

LOCATION

SULLIVAN AVENUE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 395 FEET



ATTACHMENT 6

General Power Density

Site Name: South Windsor SC 2 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 ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970							
VZW Cellular	869							
VZW AWS	2145	1	1750	1750	44	0.3251	1.0	32.51%
VZW 700	746							

Total Percentage of Maximum Permissible Exposure

32.51%

*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/cm² = milliwatts per square centimeter
 ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 7

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

Airspace User: Mark Brauer
File: SOUTH_WINDSOR_SC_2_CT
Location: Hartford, CT
Latitude: 41°-49'-43.07" Longitude:
72°-33'-10.49"
SITE ELEVATION AMSL.....120 ft.
STRUCTURE HEIGHT.....46 ft.
OVERALL HEIGHT AMSL.....166 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 7B6
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for HFD
- 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: 7B6: SKYLARK AIRPARK

Type: A RD: 36742.39 RE: 125

- 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

VFR TRAFFIC PATTERN AIRSPACE FOR: HFD: HARTFORD-BRAINARD

Type: A RD: 40278.96 RE: 18.3

- 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) MOCA Altitude Enroute Criteria
- The Maximum Height Permitted is 1600 ft AMSL

PRIVATE LANDING FACILITIES

ARP FAA	FACIL	BEARING	RANGE	DELTA
ELEVATION	IDENT TYP NAME	To FACIL	IN NM	
IFR				
	CT00 HEL ELECTRO-METHODS INC	275.3	2.16	+62
	No Impact to Private Landing Facility Structure is beyond notice limit by 8124 feet.			
	CT62 HEL TWIN MANUFACTURING COMPANY	246	2.79	+106
	No Impact to Private Landing Facility Structure is beyond notice limit by 11952 feet.			
+114	CT14 AIR BANCROFT	308.85	3.64	
	No Impact to VFR Transitional Surface. Below surface height of 264 ft above ARP.			
+129	CT85 AIR ROBERTS FARM	322.79	4.6	
	No Impact to VFr Transitional Surface. Below surface height of 360 ft above ARP.			

+145 CT06 HEL DELTA ONE 243.7 5.39

No Impact to Private Landing Facility
Structure is beyond notice limit by 27750 feet.

+118 CT88 HEL RENTSCHLER 216.83 5.64

No Impact to Private Landing Facility
Structure is beyond notice limit by 29269 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA	APCH	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION
ANGLE	IDNT				BEAR								
-08	BDL	RADAR	ON	318.67	53379	-70	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: 35 NM. This location and height is within the Radar Line-Of-Sight.												
.01	BDL	VORTAC	D	109.0	317.99	55145	+6	CT	BRADLEY				
-57	HFD	VOR/DME	R	114.9	178.74	68356	-683	CT	HARTFORD				
-04	BAF	VORTAC	R	113.0	339.98	129318	-101	MA	BARNES				
-03	CEF	VORTAC	R	114.0	3.07	134623	-75	MA	WESTOVER				
-05	ORW	VOR/DME	I	110.0	123.45	180837	-144	CT	NORWICH				
-02	MAD	VOR/DME	R	110.4	191.44	191413	-54	CT	MADISON				
-14	PUT	VOR/DME	R	117.4	76.3	198458	-486	CT	PUTNAM				
-41	CTR	VOR/DME	I	115.1	327.57	200050	-1434	MA	CHESTER				

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: WNEZ @ 5843 meters.

AIRSPACE® and TERPS® are registered ® trademarks of Federal Airways &
Airspace®
Copyright © 1989 - 2014

11-26-2014
10:30:10

ATTACHMENT 8

July 13, 2015

Via Certificate of Mailing

Matthew B. Galligan, Town Manager
Town Hall
1540 Sullivan Avenue
South Windsor, CT 06074-2786

**Re: Installation of a Small Cell Telecommunications Facility at 1550 Sullivan Avenue,
South Windsor, Connecticut**

Dear Mr. Galligan:

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 “small cell” telecommunications facility on a parcel at 1550 Sullivan Avenue in South Windsor (the “Property”).

The proposed “small cell” would be located on the roof of the South Windsor Public Library. Cellco would install a single canister-type antenna and a remote radio head attached to a small tower mast attached to a mechanical penthouse on the roof of a building. The tower mast, antenna and RRH will be concealed by inside a faux chimney structure designed to match the brick façade of the library building. Cellco’s radio equipment will be located on the ground on a 6-foot by 8-foot concrete pad along the east side of the building.

A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

Robinson + Cole

Matthew B. Galligan
July 13, 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

July 13, 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 1550 Sullivan Avenue, South Windsor, 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 “small cell” telecommunications facility on a parcel at 1550 Sullivan Avenue in South Windsor (the “Property”).

The proposed “small cell” would be located on the roof of the South Windsor Public Library. Cellco would attach a single canister-type antenna and a remote radio head to a small tower mast attached to a mechanical penthouse on the roof of a building. The tower mast, antenna and RRH will be concealed by inside a faux chimney structure designed to match the brick façade of the library building. Cellco’s radio equipment will be located on the ground on a 6-foot by 8-foot concrete pad along the east side of the building. A copy of the full Petition is attached for your review.

July 13, 2015
Page 2

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.

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

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

**ABUTTERS LIST
PARCEL ID 64-22**

**1550 SULLIVAN AVENUE
SOUTH WINDSOR, CONNECTICUT**

	<u>Parcel ID</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
1.	64-21	L079 Sullivan Avenue	Wapping Community Church Inc. 1790 Ellington Road South Windsor, CT 06074
2.	64-35-9	1559 Sullivan Avenue	South Windsor Medical Assoc. Inc. 2340 Silas Deane Highway Rocky Hill, CT 06067
3.	64-34-8	1551 Sullivan Avenue	Christine Levesque P.O. Box 826 South Windsor, CT 06074
4.	64-33-7	1543 Sullivan Avenue	Anna E. Ravalese 1543 Sullivan Avenue South Windsor, CT 06074
5.	64-23	1530 Sullivan Avenue	Town of South Windsor 1530 Sullivan Avenue South Windsor, CT 06074
6.	64-24	1510 Sullivan Avenue	Ronald E. and William L. Jodice 107 Old Windsor Road Bloomfield, CT 06002
7.	64-25	1504 Sullivan Avenue	1504 Sullivan Avenue LLC 1504 Sullivan Avenue South Windsor, CT 06074
8.	64-26	1496 Sullivan Avenue	1496 Sullivan Avenue LLC 1496 Sullivan Avenue South Windsor, CT 06074
9.	64-3B	L072B Sullivan Avenue	Marian H. Hallowell, Et Al 95 East Quassett Road Woodstock, CT 06281-3306

	<u>Parcel ID</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
10.	64-51	L087 Ellington Road	Town of South Windsor 1540 Sullivan Avenue South Windsor, CT 06074
11.	64-10	15 Petersen Way	Judith K. Newbury 15 Petersen Way South Windsor, CT 06074
12.	64-11	35 Petersen Way	Peter R. and Anne A. Demallie 35 Petersen Way South Windsor, CT 06074
13.	64-12	45 Petersen Way	Arturd Guerra 45 Petersen Way South Windsor, CT 06074
14.	64-15	75 Petersen Way	Marilyn M. Coffin 75 Petersen Way South Windsor, CT 06074
15.	64-3	1488 Sullivan Avenue	Center Ridge Development LLC 40 Windy Hill Drive South Windsor, CT 06074
16.	76-9	Sandstone Drive	Plum Ridge c/o Elite Property Management 10 Melrose Drive, Suite 9 Farmington, CT 06032