

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP	:	SUB-PETITION NO. 1133
D/B/A VERIZON WIRELESS FOR A	:	1057 EAST MAIN STREET
DECLARATORY RULING ON THE NEED TO	:	WATERBURY, CT
OBTAIN A SITING COUNCIL CERTIFICATE	:	
FOR THE INSTALLATION OF A SMALL	:	
CELL TELECOMMUNICATIONS FACILITY	:	
ON THE ROOF OF THE BUILDING AT 1057	:	
EAST MAIN STREET IN WATERBURY,	:	
CONNECTICUT	:	OCTOBER 16, 2015

SUB-PETITION FOR DECLARATORY RULING:
ELIGIBLE FACILITIES REQUEST FOR MODIFICATIONS
THAT WILL NOT SUBSTANTIALLY CHANGE THE
PHYSICAL DIMENSIONS OF AN EXISTING BASE STATION

I. Introduction

Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified at 47 U.S.C. § 1455(a) (“Section 6409(a)”) and the October 21, 2014 Report and Order (FCC-14-533) issued by the Federal Communications Commission (“FCC”) (the “FCC Order”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Sub-Petition”) that the installation of a new “small cell” telecommunications facility on the roof of the Boys and Girls Club of Greater Waterbury, Inc. building at 1057 East Main Street in Waterbury, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its “Waterbury SC6 Facility”.

II. Factual Background

The Property is a 0.83-acre parcel in Waterbury’s CG zone and is surrounded by

residential uses to the north, south and east and by the Brass Mill Center Mall to the west. The Property is owned by the Boys and Girls Club of Greater Waterbury, Inc. See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph). T-Mobile currently maintains two (2) mast-mounted antennas and equipment cabinets on the roof of the building. Under the terms of the FCC Order, the building, therefore, constitutes an existing wireless “base station”.¹

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Waterbury and throughout the State of Connecticut. The proposed Waterbury SC6 Facility described above will provide wireless service in Cellco’s 2100 MHz frequency range only and is designed to provide improved coverage to the area around the site and capacity relief to Cellco’s existing wireless network in Waterbury.

III. Proposed Waterbury SC6 Facility

Cellco’s proposed Waterbury SC6 Facility would consist of a small tower attached to the penthouse roof in the center of the building. The tower would support a single canister-type antenna at the top and one (1) remote radio head (“RRH”) below the penthouse roof level. The tower and canister antenna will extend to an overall height of 46’.9” above ground level (AGL); approximately 4’.5” above the top of the T-Mobile antennas. Equipment associated with Cellco’s antenna will be mounted on the side of the building penthouse wall. Power and telephone service will extend from existing service inside the building. Project Plans for the Waterbury SC6 Facility are included in Attachment 2. A Structural Feasibility Letter confirming that the building can support Cellco’s base station installation is included in Attachment 3.

¹ Pursuant to the FCC Order the definition of “base station” includes any “structure that currently supports or houses an antenna, transceiver, or other associated equipment . . .”. FCC Order para. 172.

Specifications for Cellco's antenna and RRH are included in Attachment 4.

IV. Discussion

A. The Proposed Modification Will Not Cause a Substantial Change to the Physical Dimensions of the Existing Base Station

Section 6409(a) provides, in relevant part, that "a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station." Pursuant to the FCC Order, the proposed modification does not substantially change the physical dimensions of the base station if the following criteria are satisfied.

1. *The proposed modified facility will not increase the height of the base station by more than ten (10) percent or ten (10) feet, whichever is greater.* Cellco's proposed tower and canister antenna will extend only 4'.5" above the existing T-Mobile antennas.
2. *The proposed facility modification will not protrude from the edge of the structure more than six (6) feet.* Cellco's proposed tower, antenna and RRH will not protrude more than six (6) feet from the edge of the structure.
3. *The proposed facility does not involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets.* Cellco intends to install two (2) cabinets at this base station location.
4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* Cellco's small cell improvements will be located on the roof of the building. No improvements will extend off of the Property.
5. *The proposed facility does not defeat the existing concealment elements of the base station.* Consistent with the existing T-Mobile facility, Cellco does not propose any type of tower or antenna concealment at this site.

6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* The T-Mobile roof-top facility at the Property was approved by the City of Waterbury. None of the elements of Cellco's proposed facility installation conflict with T-Mobile's existing wireless base station improvements and, although not applicable, appear to be consistent with the City of Waterbury land use requirements.

B. FCC Compliance

Radio frequency ("RF") emissions from Cellco's proposed installation will be far below the standards adopted by the FCC. Included in Attachment 5 is a worst case General Power Density table for Cellco's 2100 MHz antenna confirming that the facility will operate well within the FCC safety standards.

C. Notice to the City, Property Owner and Abutting Landowners

On October 16, 2015, a copy of this Sub-Petition was sent to Waterbury's Mayor Neil M. O'Leary and the Boys and Girls Club of Greater Waterbury, Inc., the owner of the Property. *See Attachment 6.* A copy of this Sub-Petition was also sent to the owners of land that abuts the Property. A sample abutter's cover letter and the list of those abutting landowners who were sent notice of the filing of the Sub-Petition is included in Attachment 7.

V. Conclusion

Based on the information provided above, Cellco respectfully submits that the proposed modification of the existing base station at the Property constitutes an "eligible facilities request" under Section 6409(a) and the FCC Order.

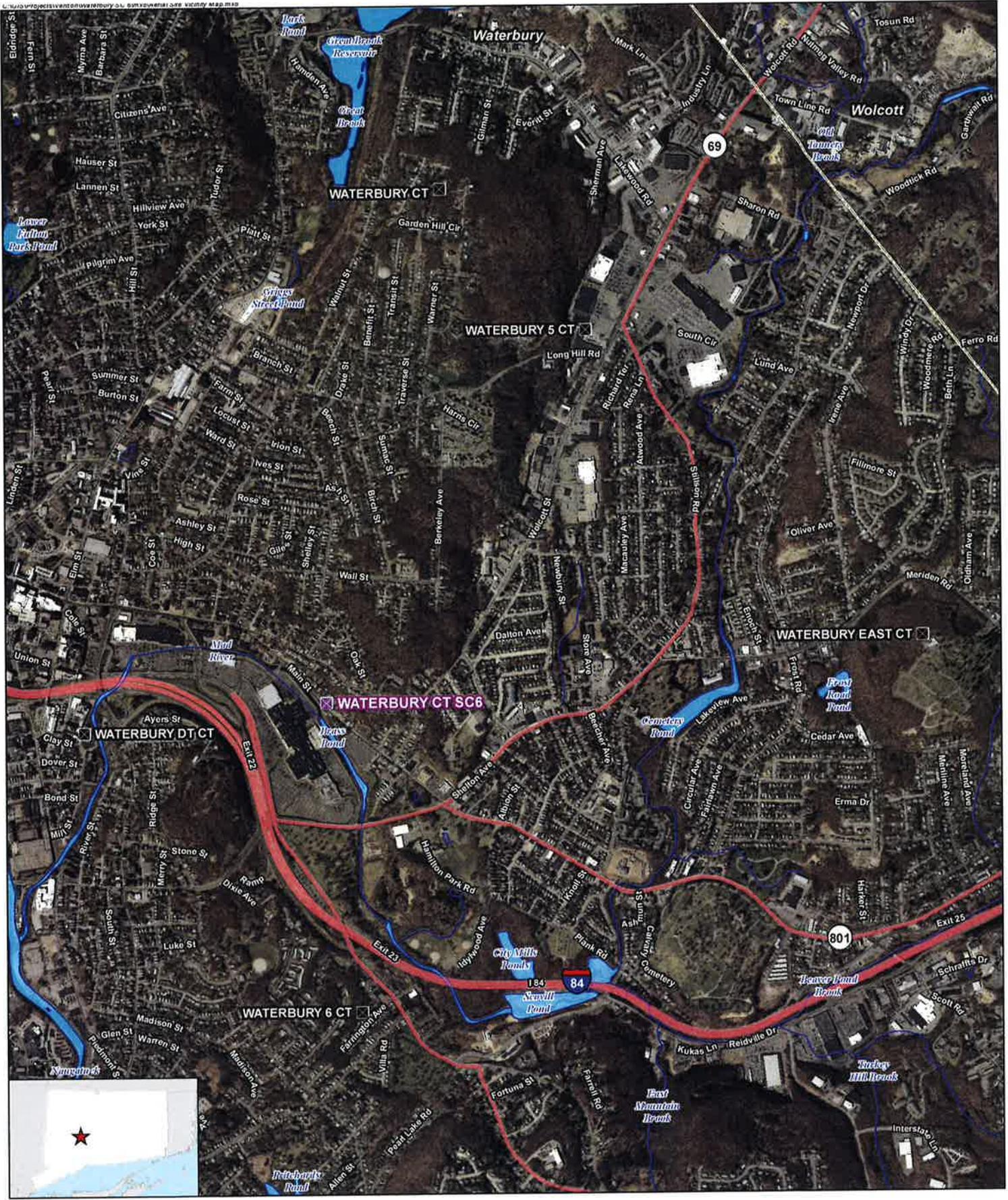
Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By  _____

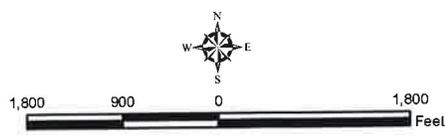
Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

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 = 1,800 feet
 Map Date: October 2015



Site Vicinity Map

Proposed Small Cell Facility
 Waterbury CT SC6
 1057 East Main Street
 Waterbury, Connecticut



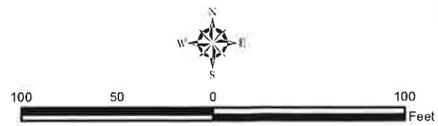


- Legend**
-  Approximate Subject Property
 -  Proposed Equipment
 -  Approximate Parcel Boundary (CTDEEP GIS)

Site Schematic

Proposed Small Cell Facility
 Waterbury CT SC6
 1057 East Main Street
 Waterbury, 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

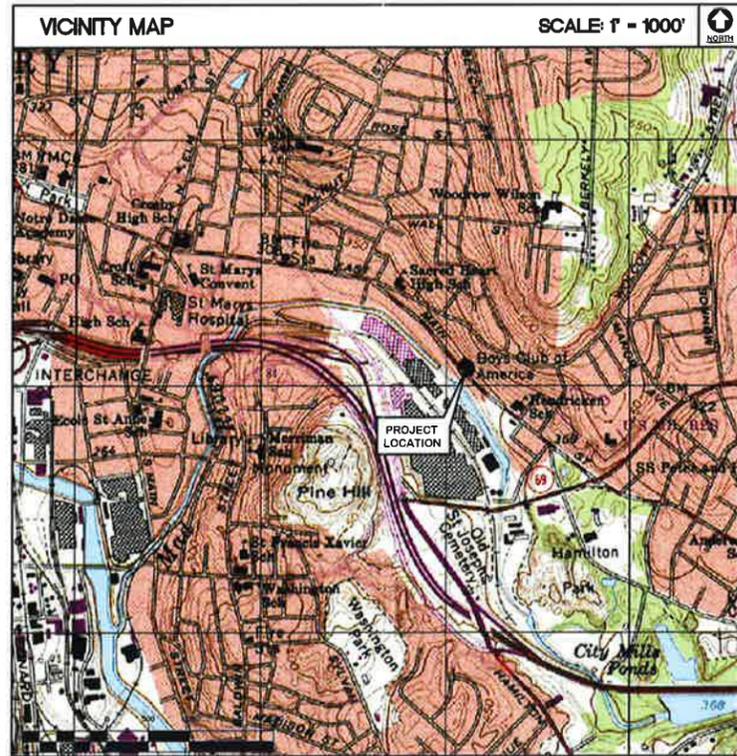
d.b.a. **verizon** wireless

WIRELESS COMMUNICATIONS FACILITY WATERBURY CT SC6 1057 EAST MAIN STREET WATERBURY, CT

SITE DIRECTIONS	
FROM: 99 EAST RIVER DRIVE, E. HARTFORD, CT. TO: 1057 EAST MAIN STREET, WATERBURY, CT.	
1. Head east on E River Dr toward Darlin St	0.3 mi
2. Turn left to stay on E River Dr	422 ft
3. Take the 1st left onto Connecticut Blvd	0.1 mi
4. Turn left to merge onto I-84	28.8 mi
5. Take exit 23	0.2 mi
6. Merge onto Hamilton Ave	0.3 mi
7. Take 1st right onto Silver Street	0.5 mi
8. Turn left onto E Main St	0.4 mi
9. Take the right at the fork to continue on E Main St, destination will be on the right	106 ft

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

PROJECT SCOPE
1. THE GENERAL SCOPE OF WORK CONSISTS OF A PROPOSED CELCO PARTNERSHIP ANTENNA INSTALLATION WITH PROPOSED CELCO PARTNERSHIP ROOFTOP ACCESS VIA PROPOSED ANGLED SHIPS LADDER TO HIGH GRADE LEVEL WITH BRIDGE ACCESS TO MAIN ROOF.
2. THE PROPOSED CELCO PARTNERSHIP EQUIPMENT TO BE INSTALLED ON PENTHOUSE WALL WITH A NON PENETRATING ACCESS PLATFORM FOR MAINTENANCE.
3. THE PROPOSED CELCO PARTNERSHIP ANTENNA INSTALLATION TO CONSIST OF A TOTAL OF (1) OMNI ANTENNA, (1) REMOTE RADIO HEAD, ASSOCIATED CABLES AND APPURTENANCES. PROPOSED ANTENNAS AND ASSOCIATED APPURTENANCES TO BE MOUNTED TO PIPE MAST ON EXTERIOR FACE OF PENTHOUSE WALL.
4. POWER & TELCO UTILITIES SHALL BE ROUTED FROM EXISTING DEMARCS WITHIN OR ADJACENT TO THE SUBJECT BUILDING.
5. THE SITE SHALL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "F" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2005 CONNECTICUT FIRE SAFETY CODE AND 2009 AMENDMENTS, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
6. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
7. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.



PROJECT SUMMARY	
SITE NAME:	WATERBURY CT SC6
SITE ADDRESS:	1057 EAST MAIN STREET WATERBURY, CT
CELCO PARTNERSHIP/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	STEVE SCHADLER CELCO PARTNERSHIP (508) 887-0357
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE LLP (860) 257-8345
SITE COORDINATES:	LATITUDE: 41°-33'-02.80"N LONGITUDE: 73°-01'-25.33"W GROUND ELEVATION: ±373.0' A.M.S.L.
COORDINATES REFERENCED FROM CELCO PARTNERSHIP AND GROUND ELEVATION REFERENCED FROM "TERRAIN NAVIGATOR" TOPOGRAPHY SOFTWARE	

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

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
2	10/14/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
1	09/30/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
0	09/24/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership
d.b.a. **verizon** wireless

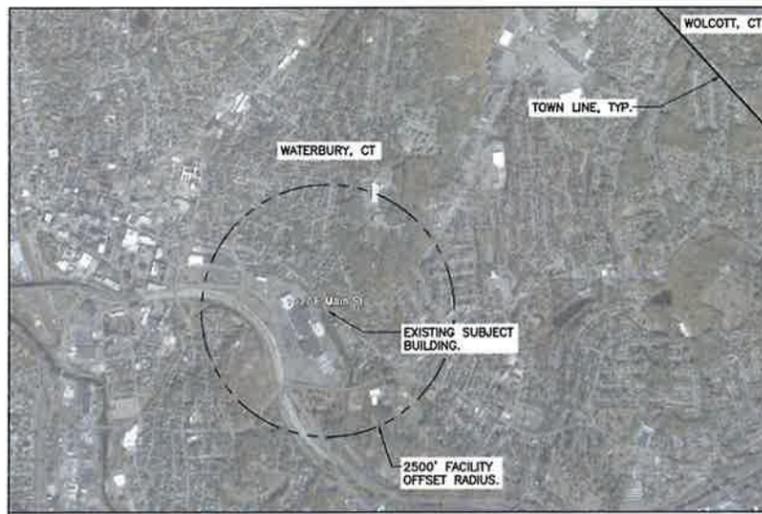
CENTEK engineering
Center on Solutions™
2031 488-0480
2031 488-6887 Fax
43-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless
WATERBURY CT SC6
1057 EAST MAIN STREET
WATERBURY, CT

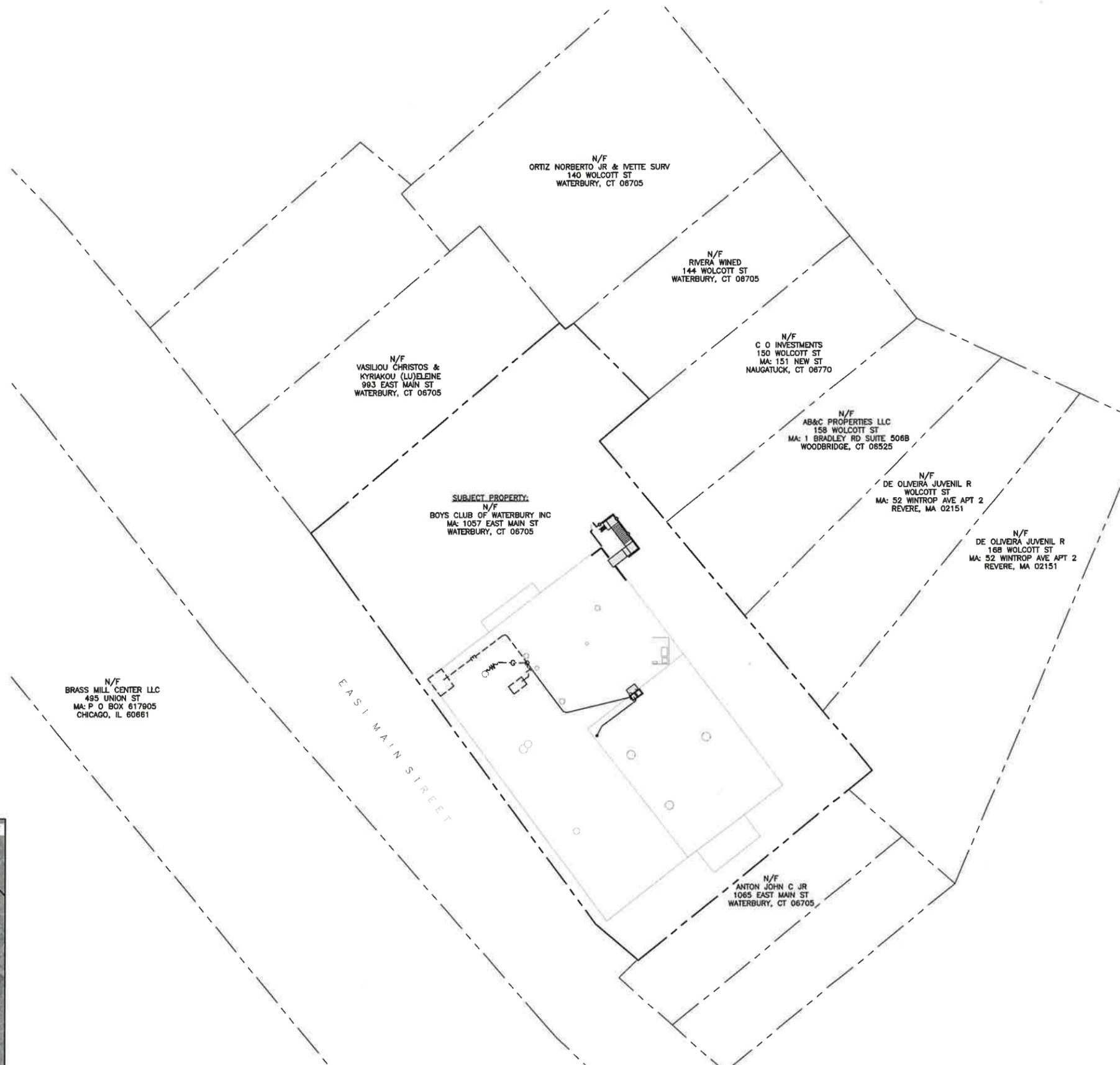
DATE: 09/22/15
SCALE: AS NOTED
JOB NO. 15095.000

TITLE SHEET

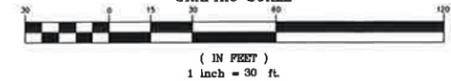
T-1
Sheet No. 1 of 3



MUNICIPALITY NOTIFICATION LIMIT MAP



1 SITE LOCATION/ ABUTTERS MAP
 C-1 SCALE: 1" = 30'



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
2	10/14/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
1	08/20/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
0	06/24/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER: SEP

Cellco Partnership
 d.b.a. Verizon Wireless

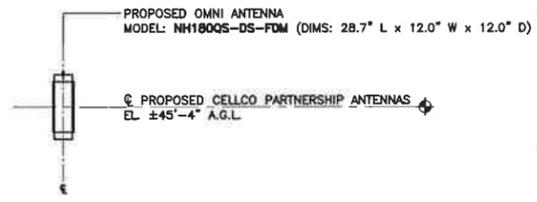
CENTEK engineering
 Connected Solutions
 (203) 498-0380
 (203) 498-8387 Fax
 62 North Branford Road
 Branford, CT 06465
 www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless
WATERBURY CT SC6
 1057 EAST MAIN STREET
 WATERBURY, CT

DATE: 09/22/15
 SCALE: AS NOTED
 JOB NO. 15095.000

SITE LOCATION/
 ABUTTERS MAP

C-1
 Sheet No. 2 of 3

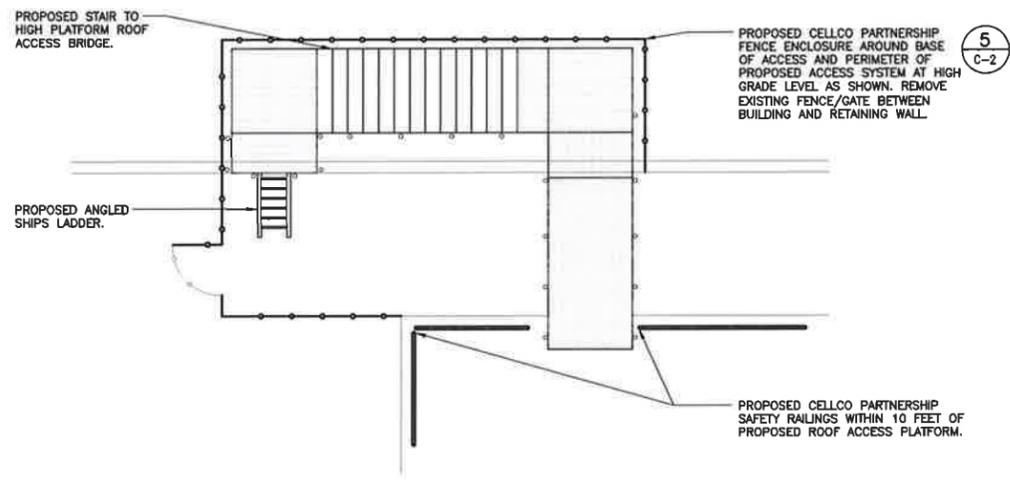


RRH/DISTRIBUTION BOX MOUNTING NOTE

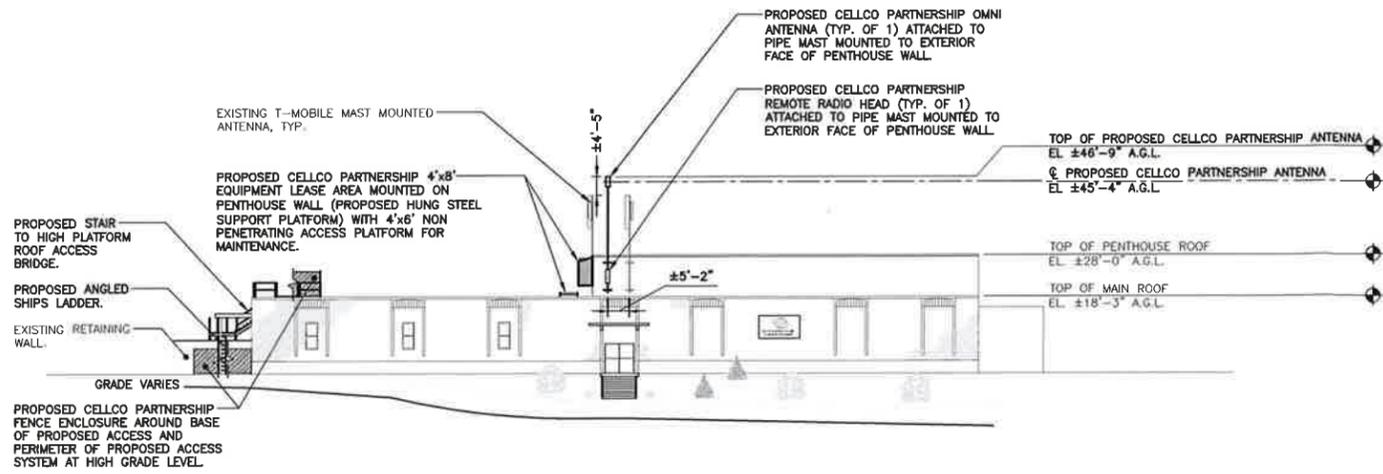
- AWS RRH (MODEL: ALJ RRH2x60-AWS (DIMS: 36.7\"/>

ATTACHED TO PIPE MAST MOUNTED TO EXTERIOR FACE OF PENTHOUSE WALL.

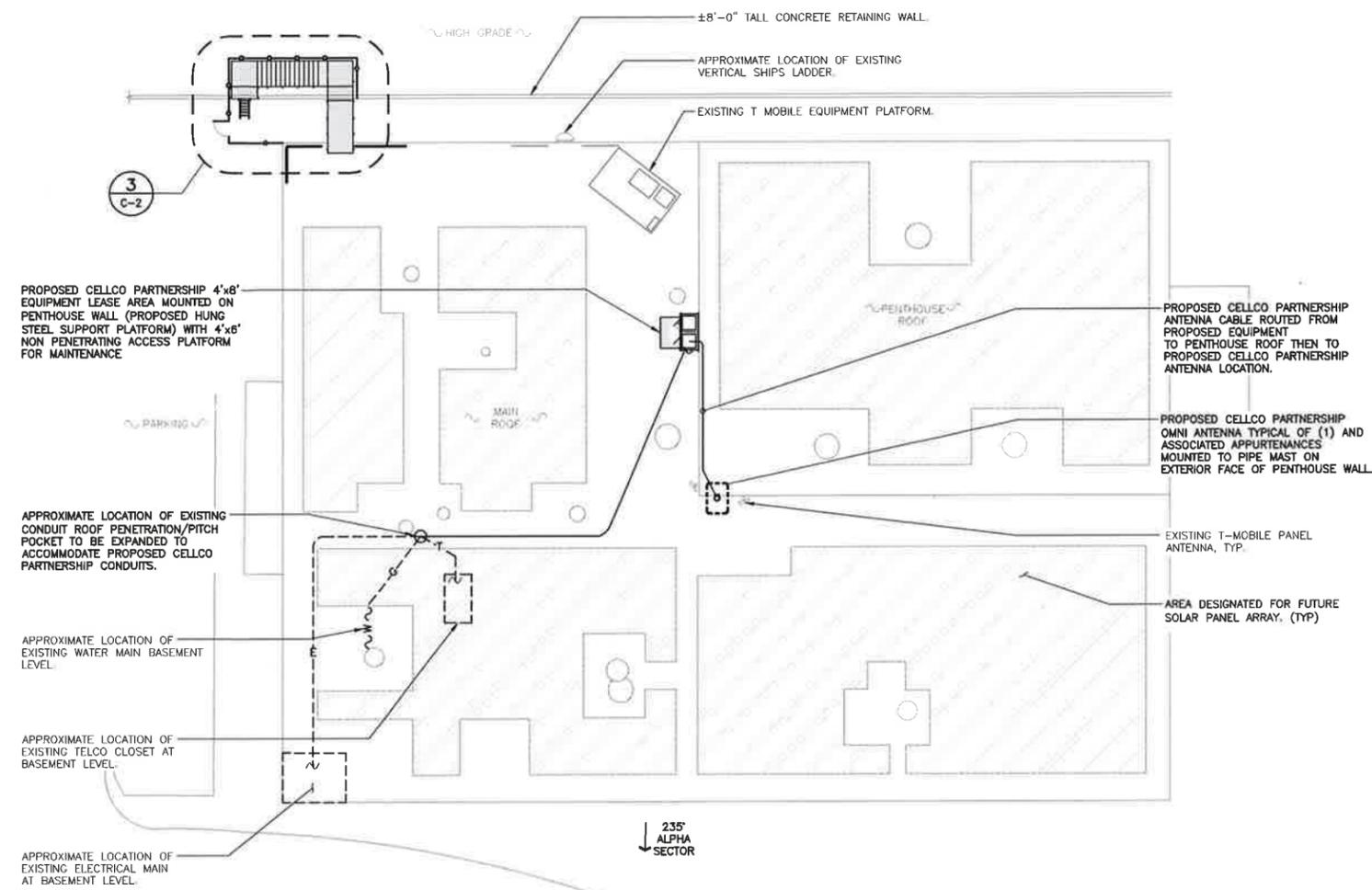
2 TYPICAL ANTENNA MOUNTING CONFIGURATION
C-2 NOT TO SCALE



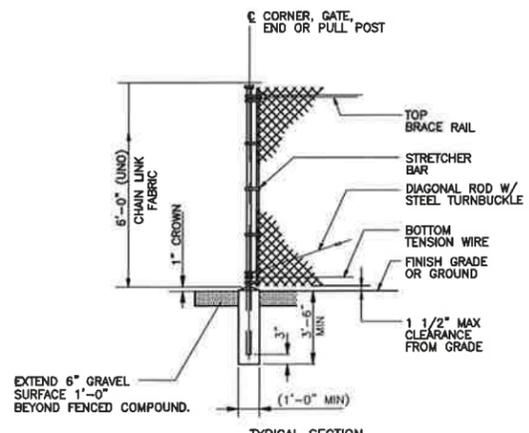
3 PROPOSED ROOFTOP ACCESS
C-2 SCALE: 1" = 5'
GRAPHIC SCALE (IN FEET) 1 inch = 5 ft.



4 SOUTHWEST ELEVATION
C-2 SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET) 1 inch = 20 ft.



1 ROOF/PARTIAL SITE PLAN
C-2 SCALE: 1" = 15'
GRAPHIC SCALE (IN FEET) 1 inch = 15 ft.



5 WOVEN WIRE FENCE DETAIL
C-2 NOT TO SCALE

- WOVEN WIRE FENCE NOTES**
- GATE POST, CORNER, TERMINAL OR PULL POST 2 1/2" Ø SCHEDULE 40 FOR GATE WIDTHS UP THRU 8 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
 - LINE POST: 2" Ø SCHEDULE 40 PIPE PER ASTM-F1083.
 - GATE FRAME: 1 1/2" Ø SCHEDULE 40 PIPE PER ASTM-F1083.
 - TOP RAIL & BRACE RAIL: 1 1/2" Ø SCHEDULE 40 PIPE PER ASTM-F1083.
 - FABRIC: 12 GA. GALVANIZED STEEL AT POSTS AND RAILS A SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG RINGS SPACED MAX 24" INTERVALS.
 - TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL AT POSTS AND RAILS A SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG RINGS SPACED MAX 24" INTERVALS.
 - TENSION WIRE: 7 GA. GALVANIZED STEEL.
 - GATE LATCH: DROP DOWN LOCKABLE FORK LATCH AND LOCK, KEYPED ALIKE FOR ALL SITES IN A GIVEN MTA.
 - LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLIED WITH IF REQUIRED.
 - HEIGHT = 6' VERTICAL.

REV.	DATE	BY	CHKD	DESCRIPTION
2	10/14/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
1	09/30/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW
0	09/24/15	JTD	DMD	CSC DRAWINGS - ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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Cellco Partnership d/b/a Verizon Wireless
WATERBURY CT SC6
1057 EAST MAIN STREET
WATERBURY, CT

DATE: 09/22/15
SCALE: AS NOTED
JOB NO. 15095.000
ROOF PLAN/
PARTIAL SITE PLAN,
ELEVATION AND
DETAILS

ATTACHMENT 3

October 7, 2015

Mr. John Tierney
Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

Re: Structural Feasibility Letter
Verizon Wireless Site Waterbury CT SC 6
1057 East Main Street
Waterbury, Connecticut 06705

CEN TEK Project No. 15095.000

Dear Mr. Tierney,

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 Louis A. Warner Associates Engineers dated 1963 was available. A site visit by Centek personnel was conducted on 04/13/2015 for the purpose of documenting existing structural member sizes and configurations. A preliminary structural analysis was prepared for use in making a final recommendation.

The host building is a 1-story concrete framed structure currently utilized as a recreational and office facility. The first level is constructed of reinforced concrete footings and slab-on-grade. The roof level deck consists of precast reinforced concrete tee sections atop reinforced concrete girders. Interior reinforced concrete columns and exterior bearing walls support the concrete girders at the roof level. Of particular concern was the existing masonry penthouse wall to be utilized in supporting the proposed wall mounted cabinet platform as depicted in the Rev. 4 Lease exhibit dated 06/24/15. Based on the existing drawings, the wall was depicted to be a nominal 12" thick wall composing of 8" CMU and 4" Brick veneer. The wall was assumed to be unreinforced and hollow for the purposes of our analysis.

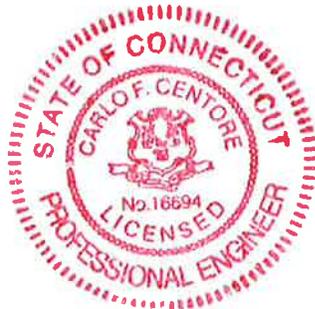
The weight of the Verizon equipment and steel dunnage frame along with applicable wind, snow and occupant loadings will be transferred to the structural bearing of the host building through the aforementioned masonry wall. The capacities were verified utilizing the existing building dead and live loads in conjunction with the weight of the proposed Verizon equipment.

Centek Engineering, Inc. will prepare sealed design documents for the proposed unmanned wireless communications facility located on the roof of the 1-story (\pm 28 ft.) host building. The final design will comply with the requirements of the 2005 Connecticut State Building Code with most current supplements. Should modifications to the existing structure be warranted to accommodate the proposed installation, it is our opinion that they could be implemented without 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:



Carlo F. Centore, PE
Principal ~ Structural Engineer



Prepared By:



Camilo A. Gaviria, PE
Project Structural Engineer

ATTACHMENT 4

Product Specifications

NH180QS-DG-FOM

Andrew® Dualband half Quasi omni Metro Cell Antenna, 698-896 and 1710-2170 MHz with fixed tilt in the low band and manual tilt in the high band. Contains internal duplexer and active GPS L1 band antenna

POWERED BY



Electrical Specifications

Frequency Band, MHz	698-806	806-896	1710-1880	1850-1990	1920-2170
Gain, dBi	6.0	6.8	9.7	9.7	9.9
Beamwidth, Horizontal, degrees	193	180	181	182	179
Beamwidth, Vertical, degrees	36.8	33.9	15.3	14.1	13.3
Beam Tilt, degrees	0	0	0-16	0-16	0-16
USLS, dB	14	14	9	10	9
Isolation, dB	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
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	125	125	125	125	125
Polarization	±45°	±45°	±45°	±45°	±45°

Mechanical Specifications

Color Radome Material	Light gray ASA, UV stabilized
Connector Interface Location Quantity	7-16 DIN Female Bottom 2
GPS Connector Interface Quantity	4.1-9.5 DIN Female 1
Wind Loading, maximum	167.0 N @ 150 km/h 37.5 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h 149.8 mph
Antenna Dimensions, L x OD	728.0 mm x 305.0 mm 28.7 in x 12.0 in
Net Weight	11.5 kg 25.4 lb

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.

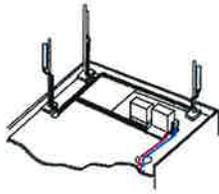
EASY INSTALLATION

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.

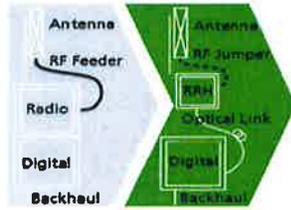
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

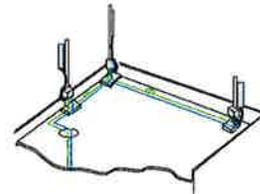
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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

Site Name: **WATERBURY CT SC6**
 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 700	746	0	0	0	45.3	0.00	0.50	0.00%
VZW Cellular	869	0	0	0	45.3	0.00	0.58	0.00%
VZW PCS	1970	0	0	0	45.3	0.00	1.00	0.00%
VZW AWS	2145	1	120	120	45.3	0.02	1.00	2.10%

Total Percentage of Maximum Permissible Exposure

2.10%

*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 6

October 16, 2015

Via Certificate of Mailing

Neil M. O’Leary, Mayor
City of Waterbury
City Hall Building
235 Grand Street
Waterbury, CT 06702

Re: Proposed Modifications to an Existing Telecommunications Facility at 1057 East Main Street, Waterbury, Connecticut

Dear Mayor O’Leary:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to establish a wireless telecommunications small cell facility at 1057 East Main Street in Waterbury (the “Property”). Cellco plans to install a small tower, attached to the roof of the building. The new tower will support a single canister antenna, at the top, and a remote radio head below the penthouse roof level. Equipment associated with Cellco’s antenna will be attached to the wall of the penthouse.

As presented in the Sub-Petition, the proposed “small cell” facility improvements at the Property constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-533). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of this Sub-Petition.

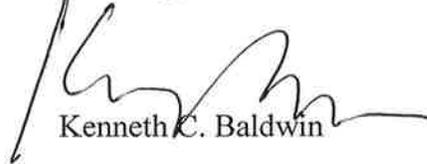
Robinson + Cole

Neil M. O'Leary
October 16, 2015
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

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

Sincerely,



Kenneth C. Baldwin

Attachment

October 16, 2015

Via Certificate of Mailing

Boys and Girls Club of Greater Waterbury, Inc.
1057 E. Main Street
Waterbury, CT 06705

Re: **Proposed Modifications to an Existing Telecommunications Facility at 1057 East Main Street, Waterbury, Connecticut**

Dear Sir or Madam:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to establish a wireless telecommunications small cell facility at 1057 East Main Street in Waterbury (the “Property”). Cellco plans to install a small tower, attached to the roof of the building. The new tower will support a single canister antenna, at the top, and a remote radio head below the penthouse roof level. Equipment associated with Cellco’s antenna will be attached to the wall of the penthouse.

As presented in the Sub-Petition, the proposed “small cell” facility improvements at the Property constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-533). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of this Sub-Petition.

Robinson + Cole

Boys and Girls Club of Greater Waterbury, Inc.

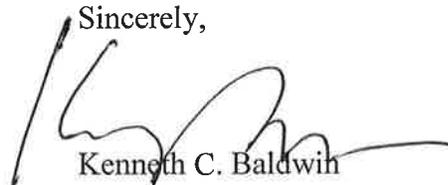
October 16, 2015

Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Kenneth C. Baldwin', written over a horizontal line.

Kenneth C. Baldwin

Attachment

ATTACHMENT 7

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 16, 2015

Via Certificate of Mailing

«Name_and_Address»

Re: Sub-Petition for Declaratory Ruling Filed with the Connecticut Siting Council for Modifications to a Telecommunications Facility at 1057 East Main Street, Waterbury, Connecticut

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to establish a wireless telecommunications small cell facility at 1057 East Main Street in Waterbury (the “Property”). Cellco plans to install a small tower, attached to the roof of the building. The new tower will support a single canister antenna, at the top, and a remote radio head below the penthouse roof level. Equipment associated with Cellco’s antenna will be attached to the wall of the penthouse.

The facility improvements constitute a eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation Act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-533). A copy of the full Sub-Petition is attached for your review.

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the Sub-Petition.

October 16, 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 Sub-Petition, the Council's process for reviewing the Sub-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

ABUTTING PROPERTY OWNERS

1057 EAST MAIN STREET, WATERBURY, CONNECTICUT

	Property Address	Owner's and Mailing Address
1.	495 Union Street	Brass Mill Center LLC c/o General Growth Properties P.O. Box 617905 Chicago, IL 60661-7905
2.	1065 East Main Street	John C. Anton, Jr. 1065 East Main Street Waterbury, CT 06705
3.	168 Wolcott Street	Juvenil R. Deoliveira 52 Winthrop Avenue, Apt. 2 Revere, MA 02151
4.	Wolcott Street	Juvenil R. Deoliveira 52 Winthrop Avenue, Apt. 2 Revere, MA 02151
5.	158 Wolcott Street	AB&C Properties LLC 1 Bradley Road, Suite 506B Woodbridge, CT 06525
6.	150 Wolcott Street	C O Investments c/o Beinton Ostrander 151 New Street Naugatuck, CT 06770
7.	144 Wolcott Street	Wined Rivera 144 Wolcott Street Waterbury, CT 06705
8.	140 Wolcott Street	Ivette and Norberto Ortiz, Jr. 140 Wolcott Street Waterbury, CT 06705
9.	993 East Main	Christos Vasilov and Eleine Kyriakou 993 East Main Waterbury, CT 06705