

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE: :
: :
A PETITION OF CELLCO PARTNERSHIP : SUB-PETITION NO. 1133
D/B/A VERIZON WIRELESS FOR A : 1249 HARTFORD PIKE
DECLARATORY RULING FOR : KILLINGLY, CONNECTICUT
APPROVAL OF AN ELIGIBLE FACILITY :
REQUEST FOR MODIFICATIONS TO AN :
EXISTING TELECOMMUNICATIONS :
TOWER AT 1249 HARTFORD PIKE, :
KILLINGLY, CONNECTICUT : NOVEMBER 2, 2015

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

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 proposed modifications to the existing Quinebaug Valley Emergency Communications Inc. (“QVEC”) telecommunications facility at 1249 Hartford Pike in Killingly, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its Dayville SC2 Facility.

II. Factual Background

QVEC maintains an existing 150-foot self-supporting lattice tower at the Property. The Property, a 2.46-acre parcel, is surrounded by low-density residential, recreational and

commercial uses along Hartford Pike. See Attachment 1 – Site Vicinity and Site Schematic Maps (Aerial Photograph). The existing tower is shared by QVEC and AT&T Wireless (“AT&T”). Equipment associated with the existing antennas is located on the ground near the base of the tower.

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Killingly and throughout the State of Connecticut. Initially, the proposed Dayville SC2 Facility described above will provide wireless service in Cellco’s 2100 MHz frequency range only and is designed to off-load capacity from Cellco’s nearby Killingly (Beta sector antennas) cell site.

III. Proposed Dayville SC2 Facility

At the Dayville SC2 Facility, Cellco will install a single canister-type antenna (Model NH65PS-DG-F0M) and one (1) remote radio head (“RRH”) (Model RRH2x60) at a height of 130 feet above ground level (“AGL”) on the existing tower. Cellco will also install two (2) equipment cabinets on a 8’ x 8’ concrete pad near the base of the tower. Power and telephone service will extend from the existing utility service at the tower site. Project Plans for the Dayville SC2 Facility are included in Attachment 2. Specifications for Cellco’s antenna and RRH are included in Attachment 3. A Structural Analysis Report (“Structural Report”) confirming that the existing tower can accommodate Cellco’s modifications is 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 proposes to install its antenna at the 130-foot level on the existing 150-foot lattice tower.

2. *The proposed facility will not protrude from the edge of the structure more than six (6) feet.* The proposed antenna and mounting structures will not protrude more than six (6) feet from the existing tower 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) equipment cabinets on a concrete pad near the base of the tower.

4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* No excavation or site development activity will occur outside the limits of the existing fenced compound.

5. *The proposed facility does not defeat the existing concealment elements of the base station.* No concealment elements have been incorporated into the existing tower structure.

6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* None of the elements of Cellco’s proposed facility conflict with any of the existing facility improvements or prior Council approvals for the shared use of the tower.

B. FCC Compliance

Radio frequency (“RF”) emissions from Cellco’s proposed installation will be below the standards adopted by the FCC. Included in Attachment 5 is a cumulative General Power Density table for all existing carriers and Cellco’s proposed base station modifications.

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

On November 2, 2015, a copy of this Sub-Petition was sent to Killingly’s Town Manager, Sean Hendricks and to QVEC, the Owner of the tower and the Property. *See* Attachment 6. Copies of this Sub-Petition were 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 a copy 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

-  Approximate Subject Property
-  Proposed Verizon Wireless Small Cell Cabinets
-  Existing Facility Compound (by others)
-  Proposed Fenced Compound Extension (by others)

Map Notes:
 none within mapped area
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 150 feet
 Map Date: October 2015



Site Schematic

Proposed Small Cell Installation
 Dayville CT SC2
 1249 Hartford Pike
 East Killingly, Connecticut

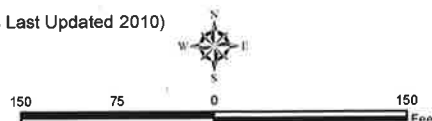




Legend

- Approximate Subject Property
- Proposed Verizon Wireless Small Cell Cabinets
- Existing Facility Compound (by others)
- Proposed Fenced Compound Extension (by others)
- Approximate Parcel Boundary (CTDEEP GIS Parcels Last Updated 2010)

Map Notes:
 none within mapped area
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 150 feet
 Map Date: October 2015



Site Schematic

Proposed Small Cell Installation
 Dayville CT SC2
 1249 Hartford Pike
 East Killingly, Connecticut



ATTACHMENT 2

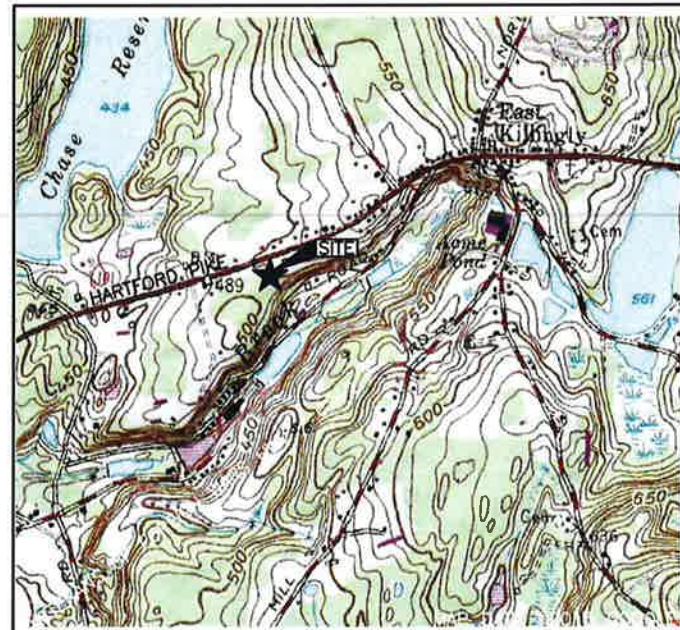
CELLCO PARTNERSHIP



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

DAYVILLE CT SC2

1249 HARTFORD PIKE
EAST KILLINGLY, CT. 06243



VICINITY MAP SCALE: N.T.S.

DIRECTIONS TO SITE:

GET ON CT-2 E TOWARD NORWICH
MERGE ONTO I-84 E
TAKE EXIT 69 FOR CT-74 TOWARD US-44/WILLINGTON/PUTNAM
TURN RIGHT ONTO CT-74 E
TURN LEFT ONTO US-44 E
CONTINUE STRAIGHT ONTO CT-101 E

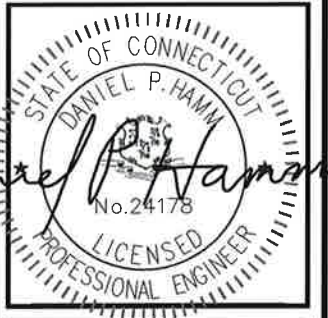
DESTINATION IS ON THE RIGHT
1249 HARTFORD PIKE, EAST KILLINGLY, CT 06243

CONSULTANT TEAM	
PROJECT ENGINEER	
HUDSON DESIGN GROUP, LLC 1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 3090 NORTH ANDOVER, MA 01845 TEL: 1-(978)-557-5553 FAX: 1-(978)-336-5586	
MEP ENGINEER	
HUDSON DESIGN GROUP, LLC 1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 3090 NORTH ANDOVER, MA 01845 TEL: 1-(978)-557-5553 FAX: 1-(978)-336-5586	

PROJECT SUMMARY	
SITE NAME:	DAYVILLE CT SC2
SITE ADDRESS:	1249 HARTFORD PIKE EAST KILLINGLY, CT. 06243
PROPERTY OWNER:	QUINEBAUG VALLEY COMM INC, 1249 HARTFORD PIKE EAST KILLINGLY, CT 06243-1810
APPLICANT:	CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
SITE ACQUISITION CONTACT:	HOLLIS REDDING STRUCTURE CONSULTING GROUP (860)966-0989
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN ESQ. ROBINSON + COLE LLP (860)275-8345
LATITUDE:	N41° 50' 43.40"
LONGITUDE:	W71° 49' 41.34"

SHEET INDEX	
SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
C-1	ABUTTERS MAP
A-1	COMPOUND PLAN
A-2	ELEVATION

SCOPE OF WORK INFO.	
<p>VERIZON WIRELESS IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS:</p> <ul style="list-style-type: none"> • ANTENNA: (1) SMALL CELL ANTENNA • RRH: (1) RRH <p>ITEMS LISTED ABOVE TO BE MOUNTED ON EXISTING SELF-SUPPORT TOWER.</p> <ul style="list-style-type: none"> • CABINETS: (2) SMALL CELL CABINETS ON NEW 8'x8' CONCRETE PAD <p>ITEMS LISTED ABOVE TO BE INSTALLED WITHIN EXISTING FENCED COMPOUND</p>	<p>AT&T WIRELESS IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS:</p> <ul style="list-style-type: none"> • ANTENNAS: (12) PANEL ANTENNAS • RRHs: (18) RRHs • SURGE ARRESTORS: (3) SURGE ARRESTORS <p>ITEMS LISTED ABOVE TO BE MOUNTED ON EXISTING SELF-SUPPORT TOWER.</p> <ul style="list-style-type: none"> • EQUIPMENT SHELTER: (1) 12'x16' SHELTER WITH GENERATOR ON A 12"x24" CONCRETE PAD <p>ITEMS LISTED ABOVE TO BE INSTALLED WITHIN EXISTING, EXPANDED FENCED COMPOUND.</p>
FINAL DEMARK LOCATION TO BE VERIFIED/DETERMINED BY UTILITY COMPANIES. UTILITIES SHALL BE ROUTED UNDERGROUND FROM UTILITY H-FRAME TO VERIZON CABINET AND AT&T SHELTER.	



Daniel P. Haman

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	10/30/15	REVISED PER COMMENTS	GC
0	06/12/15	ISSUED FOR REVIEW	DJM

SITE NAME:
DAYVILLE CT SC2

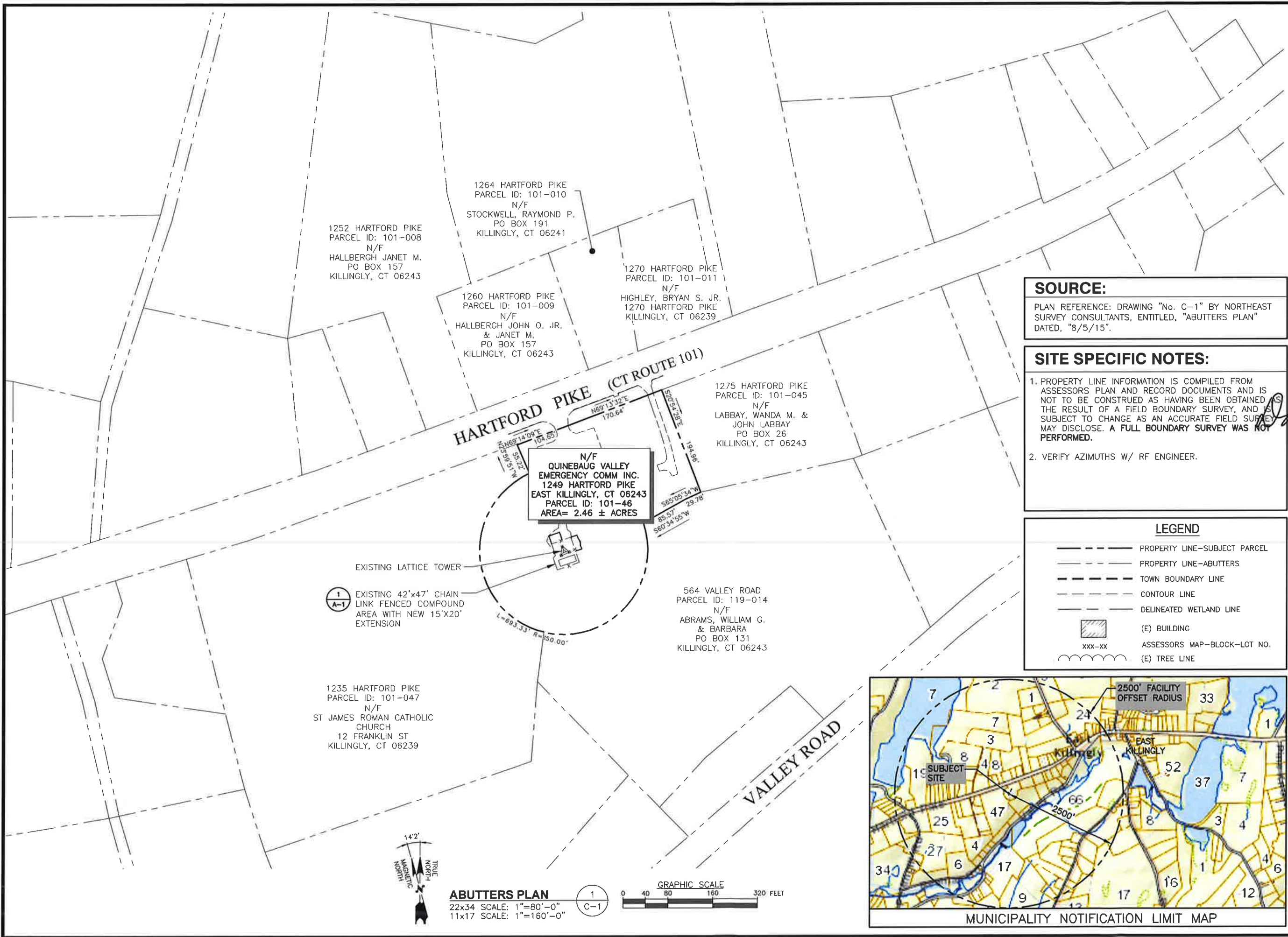
SITE ADDRESS:
1249 HARTFORD PIKE
EAST KILLINGLY, CT. 06243

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 336-5864



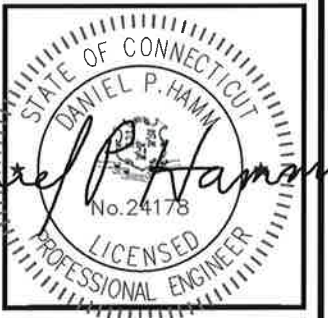
SOURCE:
PLAN REFERENCE: DRAWING "No. C-1" BY NORTHEAST SURVEY CONSULTANTS, ENTITLED, "ABUTTERS PLAN" DATED, "8/5/15".

SITE SPECIFIC NOTES:

1. PROPERTY LINE INFORMATION IS COMPILED FROM ASSESSORS PLAN AND RECORD DOCUMENTS AND IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD BOUNDARY SURVEY, AND IS SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. A FULL BOUNDARY SURVEY WAS NOT PERFORMED.
2. VERIFY AZIMUTHS W/ RF ENGINEER.

LEGEND

- PROPERTY LINE-SUBJECT PARCEL
- PROPERTY LINE-ABUTTERS
- TOWN BOUNDARY LINE
- CONTOUR LINE
- DELINEATED WETLAND LINE
- [Hatched Box] (E) BUILDING
- XXX-XX ASSESSORS MAP-BLOCK-LOT NO.
- ~ ~ ~ (E) TREE LINE



CHECKED BY: DJR
APPROVED BY: DPH

SUBMITTALS

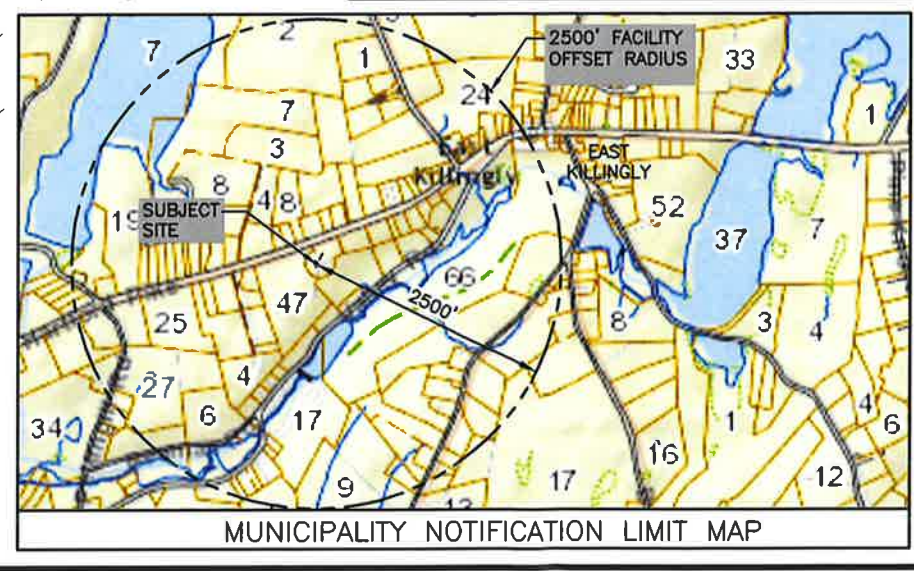
REV.	DATE	DESCRIPTION	BY
1	10/30/15	REVISED PER COMMENTS	CC
0	06/12/15	ISSUED FOR REVIEW	DJM

SITE NAME:
DAYVILLE CT SC2

SITE ADDRESS:
1249 HARTFORD PIKE
EAST KILLINGLY, CT. 06243

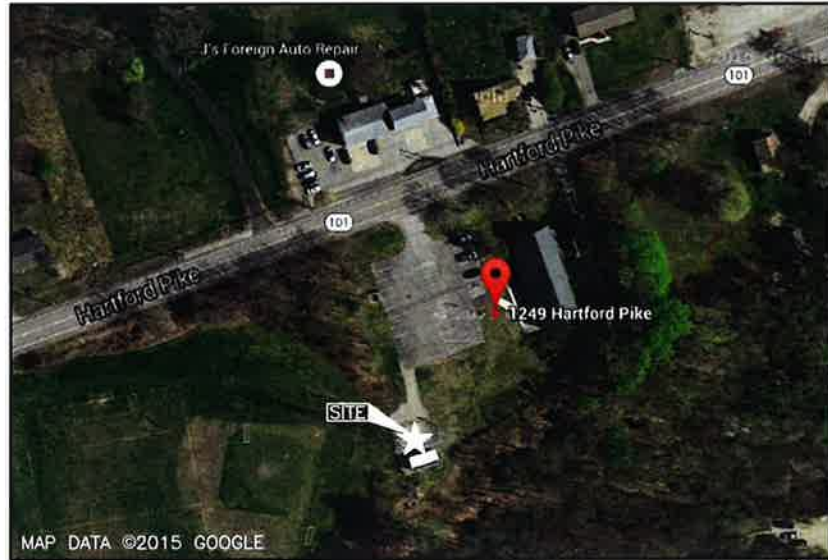
SHEET TITLE
ABUTTERS MAP

SHEET NUMBER
C-1



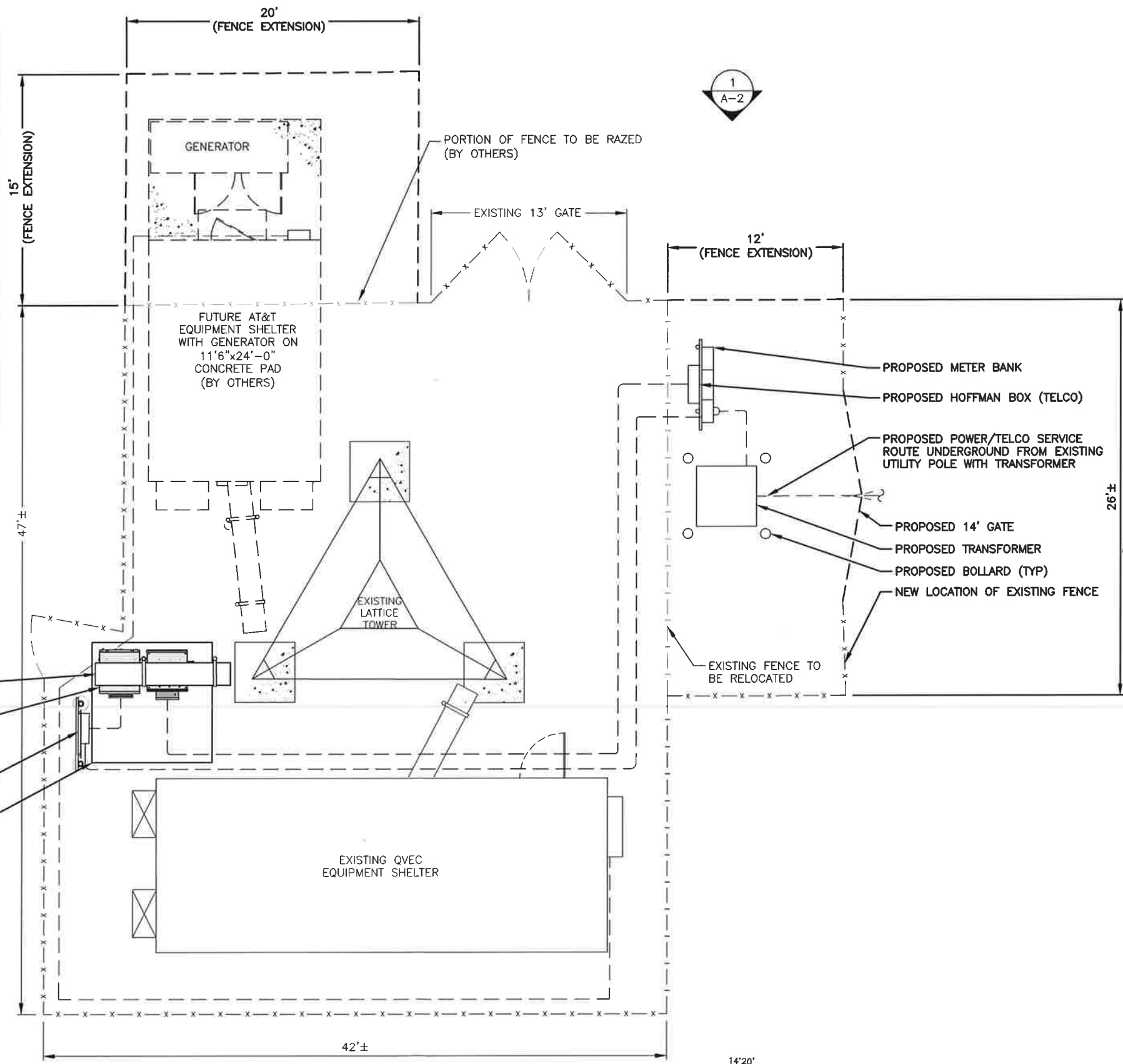
ABUTTERS PLAN
22x34 SCALE: 1"=80'-0"
11x17 SCALE: 1"=160'-0"

GRAPHIC SCALE
0 40 80 160 320 FEET



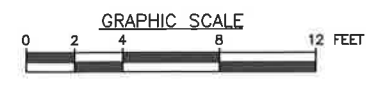
LOCUS MAP SCALE: N.T.S.

NOTE:
REFER TO STRUCTURAL ANALYSIS REPORT
PREPARED BY HUDSON DESIGN GROUP, LLC. DATED
JULY 15, 2015



- PROPOSED VERIZON ICE BRIDGE
- PROPOSED SMALL CELL CABINETS ON PROPOSED CONCRETE PAD
- PROPOSED POWER DISTRIBUTION CABINET
- PROPOSED CONCRETE PAD 8'x8' LEASE AREA

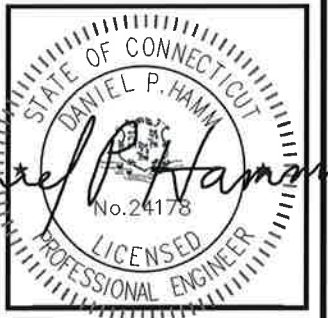
COMPOUND PLAN
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"



PREPARED FOR: CELCO PARTNERSHIP D.B.A.



1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 336-5586



CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	10/30/15	REVISED PER COMMENTS	GC
0	06/12/15	ISSUED FOR REVIEW	DJM

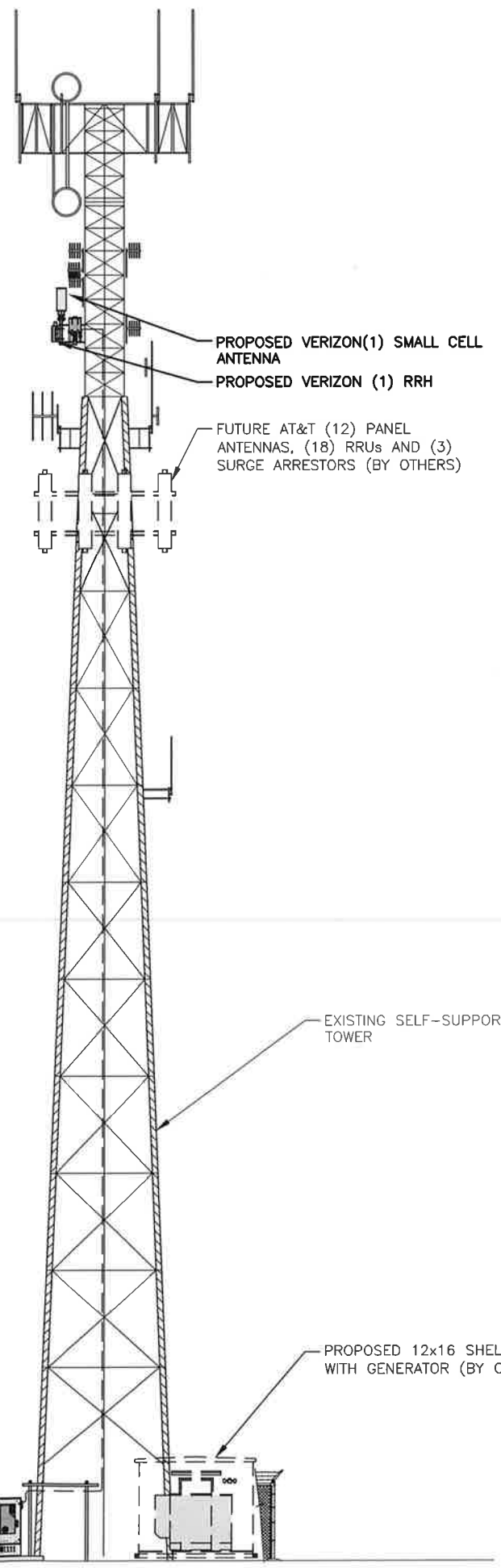
SITE NAME:
DAYVILLE CT SC2

SITE ADDRESS:
1249 HARTFORD PIKE
EAST KILLINGLY, CT. 06243

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

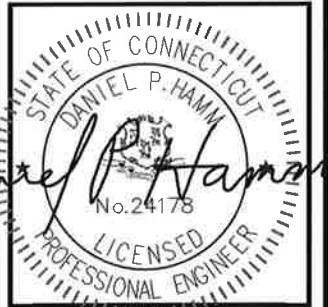
- ◆ TOP OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 167' ± (AGL)
ELEV: 669' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 150' ± (AGL)
ELEV: 652' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 140' ± (AGL)
ELEV: 642' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 135' ± (AGL)
ELEV: 637' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 133' ± (AGL)
ELEV: 635' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 132' ± (AGL)
ELEV: 634' ± (AMSL)
- ◆ ϕ OF PROPOSED VERIZON ANTENNA
ELEV: 130' ± (AGL)
ELEV: 632' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 127' ± (AGL)
ELEV: 629' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 118' ± (AGL)
ELEV: 620' ± (AMSL)
- ◆ ϕ OF FUTURE AT&T ANTENNAS (BY OTHERS)
ELEV: 108' ± (AGL)
ELEV: 610' ± (AMSL)
- ◆ ϕ OF EXISTING ANTENNAS (BY OTHERS)
ELEV: 85' ± (AGL)
ELEV: 587' ± (AMSL)



NOTE:
REFER TO STRUCTURAL ANALYSIS REPORT
PREPARED BY HUDSON DESIGN GROUP, LLC. DATED
JULY 15, 2015

RRH & OVP NOTE:
THE PROPOSED RRH INSTALLATION TO CONSIST OF
(1) RRH
THE PROPOSED RRH INSTALLATION TO CONSIST OF
(1) OVP

ANTENNA NOTE:
THE PROPOSED ANTENNA INSTALLATION TO CONSIST OF
(1) SMALL CELL ANTENNA AND ASSOCIATED CABLES &
APPURTENANCES.



Handwritten signature: Daniel P. Haman

CHECKED BY: DJR

APPROVED BY: DPH

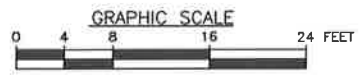
SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	10/30/15	REVISED PER COMMENTS	GC
0	06/12/15	ISSUED FOR REVIEW	DJM

SITE NAME:
DAYVILLE CT SC2

SITE ADDRESS:
1249 HARTFORD PIKE
EAST KILLINGLY, CT. 06243

SHEET TITLE
ELEVATION

SHEET NUMBER
A-2



◆ GROUND LEVEL
ELEV: 0'-0" ± (AGL)
ELEV: 502'-0" ± (AMSL)

NORTH ELEVATION 1
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0" A-2

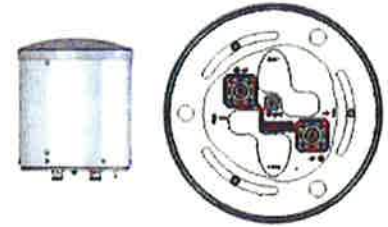
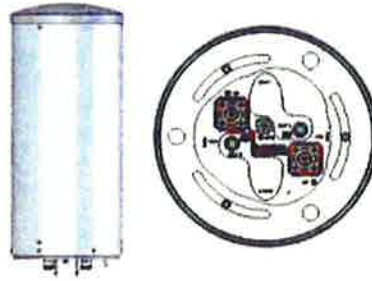
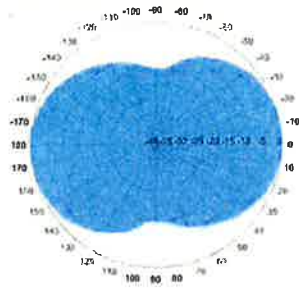
ATTACHMENT 3

Metro Cell Antennas with Internal Diplexer and GPS Antenna

Dualband Bi-Directional (2x65°), Metro Cell Antenna

NH65PS-DG-F0M

NH65PT-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	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	6.5	7.5	10.2	10.4	10.7	3.5	4.5	6.1	6.2	6.5
Beamwidth, Horizontal, degrees	70	70	65	65	65	70	70	65	65	65
Beamwidth, Vertical, degrees	30.0	24.0	16.0	15.0	14.0	60.0	55.0	16.0	15.0	14.0
USLS, dB	12	12	15	15	15	-	-	12	10	10
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

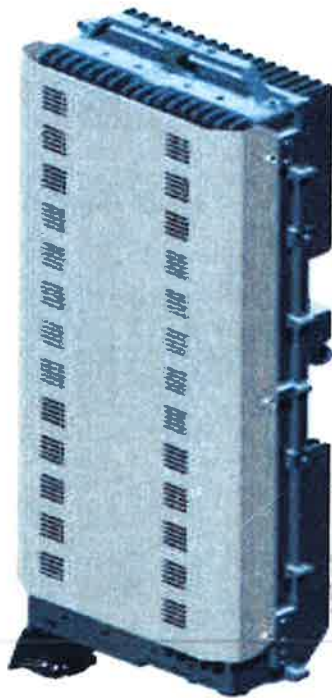
Connector Interface	7 - 16 DIN Female	7 - 16 DIN Female
Connector Quantity, Location	2, Bottom	2, Bottom
GPS Connector Interface	4.1/9.5 DIN Female	4.1/9.5 DIN Female
GPS Connector Quantity, Location	1, Bottom	1, Bottom
Length, mm (inch)	730 (28.7)	360 (14.2)
Outer Diameter, mm (inch)	305 (12.0)	305 (12.0)
Wind Speed, maximum, km/h (mph)	241.4 (150)	241.4 (150)
Net Weight, kg (lb)	16.0 (35.3)	10.0 (22.0)

AVAILABILITY

Expected Ready Date for Manufacturing	May 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.

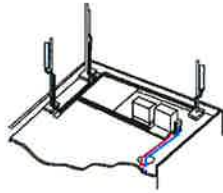
EASY INSTALLATION

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.

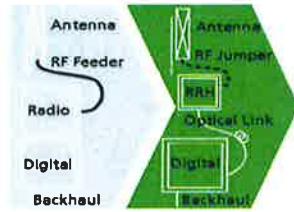
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

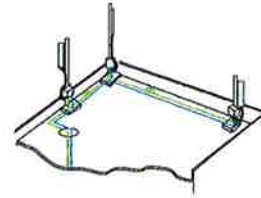
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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)

Safety and Regulatory Data

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

Environmental specifications

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

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ATTACHMENT 4

STRUCTURAL ANALYSIS REPORT

For

DAYVILLE CT SC2

1249 HARTFORD PIKE
EAST KILLINGLY, CT 06243

Antennas Mounted on the Tower



Prepared for:



400 Friberg Parkway
Westborough, MA 01581

Dated: July 15, 2015

Prepared by:

Hudson
Design Group LLC



1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
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Gi Kai Wang 7/15/2015



SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by Verizon to conduct a structural evaluation of the 150' self supporting tower supporting the proposed Verizon's antennas located at elevation 130' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of Verizon's antennas listed below.

Record drawings of the existing tower were not available for our use. The previous structural analysis report prepared by Chappell Engineering Associates LLC, dated November 12, 2013, was available and obtained for our use.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing tower **IS IN CONFORMANCE** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The tower structure is rated at 97.5% - (Diagonals at Tower Section T7 from EL.20' to EL.40' Controlling).



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	DB222	155.5'	Steel Platform
	(3) Station Master 201	155.5'	Steel Platform
	DB420	155.5'	Steel Platform
	(2) PD1142	155'	Steel Platform
	4' Dish	150'	Side Mount Standoff
	4' Dish	140'	Side Mount Standoff
	(3) 4' Yagi	137'	Side Mount Standoff
	4' Yagi	133'	Side Mount Standoff
	Diamond D130J	133'	Side Mount Standoff
	(2) 4' Yagi	132'	Side Mount Standoff
VERIZON	NH65PS-DG-F0M	130'	Side Mount Standoff
VERIZON	RRH2X60 AWS	130'	Side Mount Standoff
	4' Yagi	127'	Side Mount Standoff
	DB222	123'	Side Mount Standoff
	DB225-A	123'	Side Mount Standoff
AT&T	(3) SBNH-1D6565C Antennas	108'	12' T-Frame
AT&T	(6) KRC 118 054 Antennas	108'	12' T-Frame
AT&T	(3) KRC 118 048 Antennas	108'	12' T-Frame
AT&T	(18) RRUS-11	108'	12' T-Frame
AT&T	(3) DC6-48-60-18-8F	108'	12' T-Frame
AT&T	(3) 860 10025	106'	12' T-Frame
	3' Omni	87'	Tower Leg

***Proposed Verizon Appurtenances shown in Bold.**

VERIZON EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
VERIZON	Fiber Cable	130'	Face of Tower

***Proposed Verizon Coax Cables shown in Bold.**



ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Leg	96.2 %	100 – 120	PASS	
Diagonal	97.5 %	20 – 40	PASS	Controlling
Horizontal	14.1 %	120 – 140	PASS	
Top Girt	9.7 %	120 – 140	PASS	
Bottom Girt	16.7 %	120 – 140	PASS	
Mid Girt	4.8 %	120 – 140	PASS	



DESIGN CRITERIA:

1. EIA/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
County: Windham
Wind Load: 85 mph (fastest mile)
105 mph (3 second gust)
Nominal Ice Thickness: 1/2 inch
2. Approximate height above grade to proposed antennas: 130'

Calculations and referenced documents are attached

ASSUMPTIONS:

1. The tower dimensions and member sizes are as indicated in the previous structural analysis report prepared by Chappell Engineering Associates LLC, dated November 12, 2013.
2. The appurtenances configuration is as stated in the previous structural analysis report prepared by Chappell Engineering Associates LLC, dated November 12, 2013. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
3. The tower and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities at this time.
4. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.
6. The foundation of the tower was not checked due to lack of information. As-built foundation drawings and geotechnical report would be required to determine whether the foundation is capable of supporting the proposed loadings.



SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antenna and RRH be mounted on the proposed mount pipes supported by the tower.

ONGOING AND PERIODIC INSPECTION AND MAINTENANCE:

After the Contractor has successfully completed the installation and the work has been accepted, the Owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.



Photo 1: Photo illustrating the Tower with Appurtenances shown.



CALCULATIONS

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) PD1142-1	150	4' Yagi antenna	127
DB222	150	3' Side Mount Standoff	125
Station Master 201 Omni	150	3' Side Mount Standoff	118
Station Master 201 Omni	150	DB225-A	118
Station Master 201 Omni	150	3' Side Mount Standoff	118
DB420	150	DB222	118
1' Side Mount Standoff	150	(2) KRC 118 054 w/mount pipe	108
SP4-5.2	150	KRC 118 048 w/mount pipe	108
PiROD 13' Top Mounted Platform w/handrails (Lattice)	148	(6) Ericsson RRUS-11	108
SP4-5.2	140	SBNH-1D6565C w/mount pipe	108
4' Yagi antenna	137	(2) KRC 118 054 w/mount pipe	108
4' Yagi antenna	137	KRC 118 048 w/mount pipe	108
4' Yagi antenna	137	(6) Ericsson RRUS-11	108
3' Side Mount Standoff	135	SBNH-1D6565C w/mount pipe	108
3' Side Mount Standoff	135	(2) KRC 118 054 w/mount pipe	108
3' Side Mount Standoff	135	KRC 118 048 w/mount pipe	108
Diamond D130J Antenna	133	(6) Ericsson RRUS-11	108
4' Yagi antenna	133	DC6-48-60-18-8F	108
4' Yagi antenna	132	DC6-48-60-18-8F	108
4' Yagi antenna	132	DC6-48-60-18-8F	108
2' Side Mount Standoff (VERIZON - proposed)	130	PiROD 12' T-Frame (ATI)	108
NH65PS-DG-F0M w/ Mount Pipe	130	PiROD 12' T-Frame	108
RRH2X60 AWS	130	PiROD 12' T-Frame	108
3' Side Mount Standoff	130	SBNH-1D6565C w/mount pipe	108
3' Side Mount Standoff	130	860 10025	106
3' Side Mount Standoff	129	860 10025	106
		860 10025	106
		Omni 1"x3'	85

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

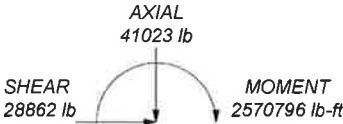
TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 97.5%

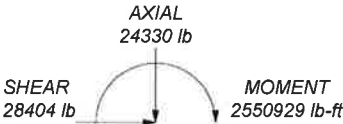
MAX. CORNER REACTIONS AT BASE:

DOWN: 199206 lb
SHEAR: 16803 lb

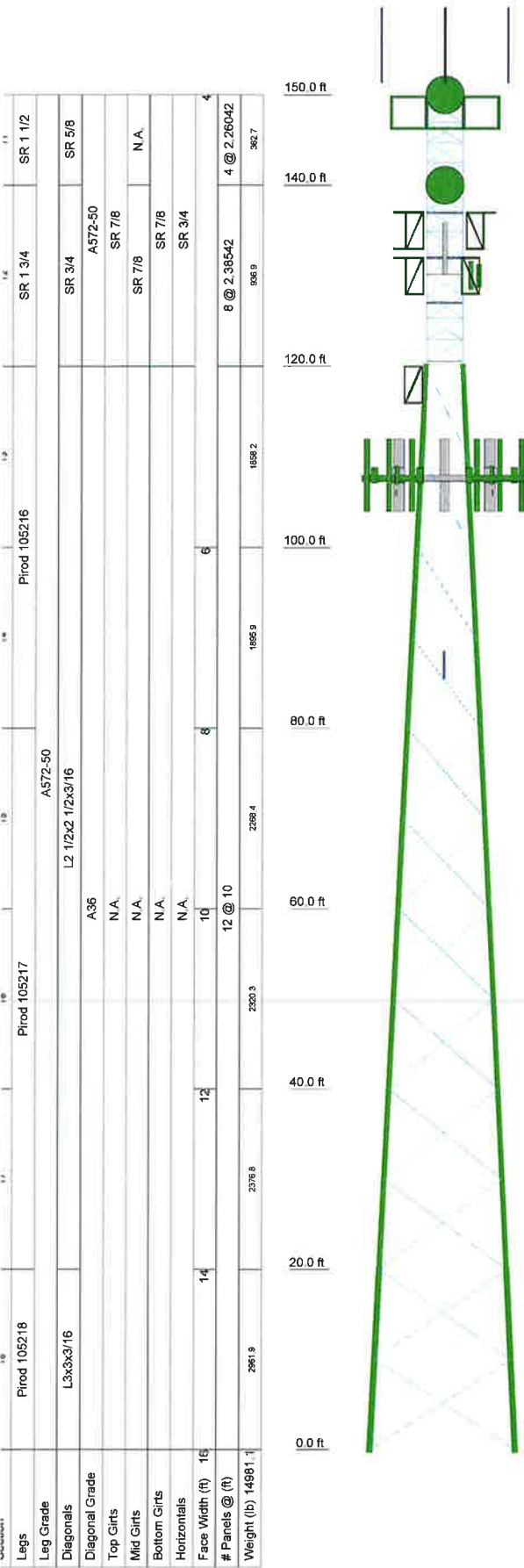
UPLIFT: -166692 lb
SHEAR: 16647 lb



TORQUE 4481 lb-ft
74 mph WIND - 0.5000 in ICE



TORQUE 4613 lb-ft
REACTIONS - 85 mph WIND



Legs	SR 1 1/2	SR 1 3/4	SR 3/4	SR 5/8	SR 7/8	N.A.	SR 7/8	SR 3/4	4 @ 2.26042	382.7
Diagonal Grade	A572-50	A572-50	A572-50	A572-50	A572-50	A572-50	A572-50	A572-50	8 @ 2.38542	936.9
Top Girts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1652.2	
Mid Girts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1652.9	
Bottom Girts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1652.9	
Horizontals	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2288.4	
Face Width (ft)	16	14	12	10	8	8	8	8	2220.3	
# Panels @ (ft)	12 @ 10	12 @ 10	12 @ 10	12 @ 10	12 @ 10	12 @ 10	12 @ 10	12 @ 10	2376.8	
Weight (lb)	14981.1	2961.9	2376.8	2220.3	2288.4	1652.9	1652.9	1652.2		

Hudson Design Group LLC 1600 Osgood Street Bldg. 20N Suite 3090 North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 226-5586	Job: DAYVILLE CT SC2 Project: 150 ft Self Supporting Tower		
	Client: VERIZON Code: TIA/EIA-222-F Path:	Drawn by: kw Date: 07/14/15	App'd: Scale: N Dwg No.:



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Client	VERIZON	Designed by	kw

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150.00 ft above the ground line.
 The base of the tower is set at an elevation of 0.00 ft above the ground line.
 The face width of the tower is 4.00 ft at the top and 16.00 ft at the base.
 This tower is designed using the TIA/EIA-222-F standard.
 The following design criteria apply:
 Tower is located in Windham County, Connecticut.
 Basic wind speed of 85 mph.
 Nominal ice thickness of 0.5000 in.
 Ice density of 56 pcf.
 A wind speed of 74 mph is used in combination with ice.
 Temperature drop of 50 °F.
 Deflections calculated using a wind speed of 50 mph.
 A non-linear (P-delta) analysis was used.
 Pressures are calculated at each section.
 Stress ratio used in tower member design is 1.333.
 Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	150.00-140.00			4.00	1	10.00
T2	140.00-120.00			4.00	1	20.00
T3	120.00-100.00			4.00	1	20.00
T4	100.00-80.00			6.00	1	20.00
T5	80.00-60.00			8.00	1	20.00
T6	60.00-40.00			10.00	1	20.00
T7	40.00-20.00			12.00	1	20.00
T8	20.00-0.00			14.00	1	20.00

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	150.00-140.00	2.26	X Brace	No	Steps	9.0000	2.5000
T2	140.00-120.00	2.39	X Brace	No	Steps	4.0000	7.0000
T3	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T4	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T5	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T6	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T7	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T8	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000



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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150.00-140.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T2 140.00-120.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 120.00-100.00	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 100.00-80.00	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 80.00-60.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 60.00-40.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 40.00-20.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 20.00-0.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 150.00-140.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 140.00-120.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 150.00-140.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 140.00-120.00	1	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	B	Yes	Ar (CfAe)	150.00 - 0.00	1	1	0.0000	0.3750		0.22
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	150.00 - 0.00	5	5	0.0000	0.6300		0.15
LDF5-50A (7/8 FOAM)	B	Yes	Ar (CfAe)	150.00 - 0.00	4	4	0.0000	1.0900		0.33
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	135.00 - 0.00	5	5	0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	130.00 - 0.00	5	5	0.0000	0.6300		0.15



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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF4-50A (1/2 FOAM)	A	Yes	Ar (CfAe)	130.00 - 0.00	1	1	0.0000	0.6300		0.15
2.5" Rigid Conduit	C	Yes	Ar (CfAe)	108.00 - 0.00	2	2	0.0000	2.5000		1.00
T-bracket	B	No	Af (CfAe)	150.00 - 8.00	1	1	3.0000	3.0000	12.0000	8.40

1 5/8 Fiber Cable (Verizon - proposed)	C	Yes	Ar (CfAe)	130.00 - 8.00	1	1	0.0000	1.9800		1.04

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment	Placement ft		C _A A ₁ Front ft ²	C _A A ₂ Side ft ²	Weight lb
PiROD 13' Top Mounted Platform w/handrails (Lattice) (2) PD1142-1	A	None		0.0000	148.00	No Ice	31.30	31.30	1822.00
						1/2" Ice	40.20	40.20	2452.00
	C	From Centroid-Face	8.00 0.00 5.00	0.0000	150.00	No Ice	1.32	1.32	10.00
DB222						1/2" Ice	3.21	3.21	23.85
	B	From Centroid-Face	8.00 0.00 5.50	0.0000	150.00	No Ice	1.60	1.60	16.00
						1/2" Ice	2.88	2.88	20.80
Station Master 201 Omni	A	From Centroid-Face	8.00 0.00 5.50	0.0000	150.00	No Ice	1.25	1.25	6.00
						1/2" Ice	2.10	2.10	16.34
Station Master 201 Omni	B	From Centroid-Face	8.00 0.00 5.50	0.0000	150.00	No Ice	1.25	1.25	6.00
						1/2" Ice	2.10	2.10	16.34
Station Master 201 Omni	C	From Centroid-Face	8.00 0.00 5.50	0.0000	150.00	No Ice	1.25	1.25	6.00
						1/2" Ice	2.10	2.10	16.34
DB420	C	From Centroid-Face	8.00 0.00 5.50	0.0000	150.00	No Ice	3.33	3.33	34.00
						1/2" Ice	5.99	5.99	44.20
1' Side Mount Standoff	C	From Centroid-Face	8.00 0.00 0.00	0.0000	150.00	No Ice	1.00	1.00	30.00
						1/2" Ice	1.50	1.50	50.00
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice	1.50	1.50	45.00
						1/2" Ice	2.20	2.20	70.00
3' Side Mount Standoff	B	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice	1.50	1.50	45.00
						1/2" Ice	2.20	2.20	70.00
3' Side Mount Standoff	C	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice	1.50	1.50	45.00
						1/2" Ice	2.20	2.20	70.00
4' Yagi antenna	A	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice	0.93	0.47	10.00
						1/2" Ice	1.26	0.64	54.43
4' Yagi antenna	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice	0.93	0.47	10.00
						1/2" Ice	1.26	0.64	54.43
4' Yagi antenna	C	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice	0.93	0.47	10.00
						1/2" Ice	1.26	0.64	54.43



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Project	150 ft Self Supporting Tower	Date	15:56:16 07/14/15
Client	VERIZON	Designed by	kw

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
4' Yagi antenna	C	From Leg	3.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 0.93 1.26	0.47 0.64	10.00 54.43
3' Side Mount Standoff	C	From Leg	1.50 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
4' Yagi antenna	C	From Leg	3.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 0.93 1.26	0.47 0.64	10.00 54.43
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
4' Yagi antenna	A	From Leg	3.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 0.93 1.26	0.47 0.64	10.00 54.43
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
Diamond D130J Antenna	A	From Leg	3.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 2.49 2.84	2.49 2.84	2.20 25.62
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
4' Yagi antenna	A	From Leg	3.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 0.93 1.26	0.47 0.64	10.00 54.43
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
DB222	A	From Leg	3.00 0.00 5.00	0.0000	118.00	No Ice 1/2" Ice 1.60 2.88	1.60 2.88	16.00 20.80
3' Side Mount Standoff	C	From Leg	1.50 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1.50 2.20	1.50 2.20	45.00 70.00
DB225-A	C	From Leg	3.00 0.00 5.00	0.0000	118.00	No Ice 1/2" Ice 3.21 5.78	3.21 5.78	37.00 48.10
Omni 1"x3'	A	From Leg	1.00 0.00 2.00	0.0000	85.00	No Ice 1/2" Ice 0.30 0.54	0.30 0.54	12.00 14.85

PiROD 12' T-Frame (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 12.20 17.60	12.20 17.60	360.00 490.00
PiROD 12' T-Frame	B	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 12.20 17.60	12.20 17.60	360.00 490.00
PiROD 12' T-Frame	C	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 12.20 17.60	12.20 17.60	360.00 490.00
SBNH-ID6565C w/mount pipe	A	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 11.69 12.40	10.29 11.81	113.11 206.76
(2) KRC 118 054 w/mount pipe	A	From Leg	4.00 0.00	0.0000	108.00	No Ice 1/2" Ice 12.77 13.52	13.43 14.98	252.31 365.24



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Project	150 ft Self Supporting Tower	Date	15:56:16 07/14/15
Client	VERIZON	Designed by	kw

Description	Face or Leg	Offset Type	Offsets: Horiz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
KRC 118 048 w/mount pipe	A	From Leg	0.00 4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	11.55 12.28	11.14 12.65	206.11 303.95
(6) Ericsson RRUS-11	A	From Leg	3.00 0.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	50.70 71.57
SBNH-1D6565C w/mount pipe	B	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	11.69 12.40	10.29 11.81	113.11 206.76
(2) KRC 118 054 w/mount pipe	B	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	12.77 13.52	13.43 14.98	252.31 365.24
KRC 118 048 w/mount pipe	B	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	11.55 12.28	11.14 12.65	206.11 303.95
(6) Ericsson RRUS-11	B	From Leg	3.00 0.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	50.70 71.57
SBNH-1D6565C w/mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	11.69 12.40	10.29 11.81	113.11 206.76
(2) KRC 118 054 w/mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	12.77 13.52	13.43 14.98	252.31 365.24
KRC 118 048 w/mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	11.55 12.28	11.14 12.65	206.11 303.95
(6) Ericsson RRUS-11	C	From Leg	3.00 0.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	50.70 71.57
DC6-48-60-18-8F	A	From Leg	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	1.27 1.46	1.27 1.46	20.00 35.12
DC6-48-60-18-8F	B	From Leg	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	1.27 1.46	1.27 1.46	20.00 35.12
DC6-48-60-18-8F	C	From Leg	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	1.27 1.46	1.27 1.46	20.00 35.12
860 10025	A	From Leg	3.00 0.00 0.00	0.0000	106.00	No Ice 1/2" Ice	0.16 0.23	0.14 0.20	1.16 2.72
860 10025	B	From Leg	3.00 0.00 0.00	0.0000	106.00	No Ice 1/2" Ice	0.16 0.23	0.14 0.20	1.16 2.72
860 10025	C	From Leg	3.00 0.00 0.00	0.0000	106.00	No Ice 1/2" Ice	0.16 0.23	0.14 0.20	1.16 2.72

2' Side Mount Standoff (VERIZON - proposed)	B	From Leg	1.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice	1.00 1.50	1.00 1.50	30.00 50.00
NH65PS-DG-F0M w/ Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice	2.56 2.99	2.56 2.99	36.35 67.62
RRH2X60 AWS	B	From Leg	1.00	0.0000	130.00	No Ice	3.96	2.16	55.00



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Client	VERIZON	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
			0.00			1/2" Ice	4.27	2.44	79.31
			0.00						

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral Vert							
				ft	ft	°	°	ft	ft	ft ²	lb	
SP4-5.2	C	Paraboloid w/o Radome	From Centroid	8.00	0.00	0.0000		150.00	4.21	No Ice 1/2" Ice	13.91 14.47	60.00 130.00
SP4-5.2	C	Paraboloid w/o Radome	From Centroid	8.00	0.00	0.0000		140.00	4.21	No Ice 1/2" Ice	13.91 14.47	60.00 130.00
			-Face	0.00	0.00							

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service



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Project	150 ft Self Supporting Tower	Date	15:56:16 07/14/15
Client	VERIZON	Designed by	kw

Comb. No.	Description
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	23	192681.40	14233.96	-8029.06
	Max. H _x	10	183655.57	15826.36	-8938.07
	Max. H _z	17	-159393.98	-16389.53	9290.70
	Min. Vert	4	-166359.61	-14479.22	8182.59
	Min. H _x	17	-159393.98	-16389.53	9290.70
Leg B	Min. H _z	10	183655.57	15826.36	-8938.07
	Max. Vert	19	192626.87	-14235.24	-8024.42
	Max. H _x	25	-159448.27	16392.32	9288.32
	Max. H _z	25	-159448.27	16392.32	9288.32
	Min. Vert	12	-166369.15	14478.32	8184.57
Leg A	Min. H _x	6	183645.79	-15825.24	-8939.57
	Min. H _z	6	183645.79	-15825.24	-8939.57
	Max. Vert	15	199205.59	-4.66	16803.41
	Max. H _x	11	7910.68	621.34	635.97
	Max. H _z	2	192207.37	1.86	18769.77
	Min. Vert	8	-166691.92	-2.17	-16647.35
	Min. H _x	5	7910.78	-621.59	635.98
	Min. H _z	21	-159826.17	3.40	-18856.11

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	24329.70	0.00	0.00	1218.87	76.78	0.00
Dead+Wind 0 deg - No Ice	24329.70	0.00	-28404.09	-2550929.36	76.34	63.36
Dead+Wind 30 deg - No Ice	24329.70	13085.38	-24096.41	-2193128.65	-1146103.00	141.60
Dead+Wind 60 deg - No Ice	24329.70	22698.05	-14447.41	-1354946.71	-2009233.26	2217.63
Dead+Wind 90 deg - No Ice	24329.70	26532.33	10.43	2759.10	-2345101.49	3838.90
Dead+Wind 120 deg - No Ice	24329.70	23810.12	13918.71	1235951.09	-2094997.59	4550.03
Dead+Wind 150 deg - No Ice	24329.70	13460.85	23401.09	2094059.47	-1200925.01	3603.77
Dead+Wind 180 deg - No Ice	24329.70	-0.00	26899.24	2422125.11	78.51	-63.35
Dead+Wind 210 deg - No Ice	24329.70	-13460.85	23401.09	2094060.33	1201081.68	-3713.49
Dead+Wind 240 deg - No Ice	24329.70	-23810.12	13918.71	1235952.35	2095153.26	-4613.37
Dead+Wind 270 deg - No Ice	24329.70	-26532.33	10.43	2760.52	2345256.09	-3838.91
Dead+Wind 300 deg - No Ice	24329.70	-22698.05	-14447.41	-1354945.47	2009386.70	-2154.30
Dead+Wind 330 deg - No Ice	24329.70	-13085.38	-24096.41	-2193128.06	1146255.88	-31.85
Dead+Ice+Temp	41023.20	0.00	-0.00	2310.88	429.26	0.02
Dead+Wind 0 deg+Ice+Temp	41023.20	-0.00	-28862.49	-2570795.57	435.32	-104.79



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Client	VERIZON	Designed by	kw

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead+Wind 30 deg+Ice+Temp	41023.20	13224.18	-24022.04	-2169079.19	-1158690.72	476.58
Dead+Wind 60 deg+Ice+Temp	41023.20	22737.15	-14174.86	-1312673.18	-2011221.80	2510.39
Dead+Wind 90 deg+Ice+Temp	41023.20	26730.41	8.12	3525.38	-2359170.70	3978.00
Dead+Wind 120 deg+Ice+Temp	41023.20	24380.44	14210.19	1256515.35	-2137790.08	4481.43
Dead+Wind 150 deg+Ice+Temp	41023.20	13517.09	23479.58	2094252.41	-1201618.75	3441.63
Dead+Wind 180 deg+Ice+Temp	41023.20	0.00	26792.77	2404094.42	439.81	103.96
Dead+Wind 210 deg+Ice+Temp	41023.20	-13517.09	23479.58	2094249.77	1202496.57	-3261.20
Dead+Wind 240 deg+Ice+Temp	41023.20	-24380.44	14210.19	1256512.66	2138664.11	-4377.03
Dead+Wind 270 deg+Ice+Temp	41023.20	-26730.41	8.12	3524.88	2360041.58	-3977.95
Dead+Wind 300 deg+Ice+Temp	41023.20	-22737.15	-14174.86	-1312671.41	2012091.53	-2615.59
Dead+Wind 330 deg+Ice+Temp	41023.20	-13224.18	-24022.04	-2169077.10	1159561.04	-657.67
Dead+Wind 0 deg - Service	24329.70	-0.00	-9828.41	-881899.87	76.99	21.78
Dead+Wind 30 deg - Service	24329.70	4527.81	-8337.86	-758087.71	-396535.99	42.85
Dead+Wind 60 deg - Service	24329.70	7854.00	-4999.10	-468047.02	-695201.49	767.67
Dead+Wind 90 deg - Service	24329.70	9180.74	3.61	1761.41	-811424.54	1335.19
Dead+Wind 120 deg - Service	24329.70	8238.80	4816.16	428482.19	-724887.50	1574.56
Dead+Wind 150 deg - Service	24329.70	4657.74	8097.26	725415.56	-415511.94	1240.52
Dead+Wind 180 deg - Service	24329.70	-0.00	9307.70	838934.67	77.71	-22.21
Dead+Wind 210 deg - Service	24329.70	-4657.74	8097.26	725415.92	415667.24	-1278.53
Dead+Wind 240 deg - Service	24329.70	-8238.80	4816.16	428482.69	725042.50	-1596.50
Dead+Wind 270 deg - Service	24329.70	-9180.74	3.61	1761.91	811579.16	-1335.19
Dead+Wind 300 deg - Service	24329.70	-7854.00	-4999.10	-468046.64	695355.76	-745.73
Dead+Wind 330 deg - Service	24329.70	-4527.81	-8337.86	-758087.57	396690.05	-4.84

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-24329.70	0.00	0.00	24329.70	-0.00	0.000%
2	-0.00	-24329.70	-28404.10	-0.00	24329.70	28404.09	0.000%
3	13085.38	-24329.70	-24096.41	-13085.38	24329.70	24096.41	0.000%
4	22698.05	-24329.70	-14447.41	-22698.05	24329.70	14447.41	0.000%
5	26532.33	-24329.70	10.43	-26532.33	24329.70	-10.43	0.000%
6	23810.13	-24329.70	13918.70	-23810.12	24329.70	-13918.71	0.000%
7	13460.85	-24329.70	23401.09	-13460.85	24329.70	-23401.09	0.000%
8	-0.00	-24329.70	26899.24	0.00	24329.70	-26899.24	0.000%
9	-13460.85	-24329.70	23401.09	13460.85	24329.70	-23401.09	0.000%
10	-23810.13	-24329.70	13918.70	23810.12	24329.70	-13918.71	0.000%
11	-26532.33	-24329.70	10.43	26532.33	24329.70	-10.43	0.000%
12	-22698.05	-24329.70	-14447.41	22698.05	24329.70	14447.41	0.000%
13	-13085.38	-24329.70	-24096.41	13085.38	24329.70	24096.41	0.000%
14	-0.00	-41023.20	0.00	-0.00	41023.20	0.00	0.000%
15	-0.00	-41023.20	-28862.57	0.00	41023.20	28862.49	0.000%
16	13224.19	-41023.20	-24022.10	-13224.18	41023.20	24022.04	0.000%
17	22737.19	-41023.20	-14174.88	-22737.15	41023.20	14174.86	0.000%
18	26730.47	-41023.20	8.14	-26730.41	41023.20	-8.12	0.000%
19	24380.51	-41023.20	14210.22	-24380.44	41023.20	-14210.19	0.000%
20	13517.13	-41023.20	23479.61	-13517.09	41023.20	-23479.58	0.000%
21	-0.00	-41023.20	26792.81	-0.00	41023.20	-26792.77	0.000%
22	-13517.13	-41023.20	23479.61	13517.09	41023.20	-23479.58	0.000%
23	-24380.51	-41023.20	14210.22	24380.44	41023.20	-14210.19	0.000%
24	-26730.47	-41023.20	8.14	26730.41	41023.20	-8.12	0.000%
25	-22737.19	-41023.20	-14174.88	22737.15	41023.20	14174.86	0.000%
26	-13224.19	-41023.20	-24022.10	13224.18	41023.20	24022.04	0.000%
27	-0.00	-24329.70	-9828.41	0.00	24329.70	9828.41	0.000%
28	4527.81	-24329.70	-8337.86	-4527.81	24329.70	8337.86	0.000%



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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
29	7854.00	-24329.70	-4999.10	-7854.00	24329.70	4999.10	0.000%
30	9180.74	-24329.70	3.61	-9180.74	24329.70	-3.61	0.000%
31	8238.80	-24329.70	4816.16	-8238.80	24329.70	-4816.16	0.000%
32	4657.74	-24329.70	8097.26	-4657.74	24329.70	-8097.26	0.000%
33	-0.00	-24329.70	9307.70	0.00	24329.70	-9307.70	0.000%
34	-4657.74	-24329.70	8097.26	4657.74	24329.70	-8097.26	0.000%
35	-8238.80	-24329.70	4816.16	8238.80	24329.70	-4816.16	0.000%
36	-9180.74	-24329.70	3.61	9180.74	24329.70	-3.61	0.000%
37	-7854.00	-24329.70	-4999.10	7854.00	24329.70	4999.10	0.000%
38	-4527.81	-24329.70	-8337.86	4527.81	24329.70	8337.86	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	6.164	27	0.3646	0.1999
T2	140 - 120	5.379	27	0.3604	0.1222
T3	120 - 100	3.903	27	0.3155	0.0590
T4	100 - 80	2.651	27	0.2642	0.0230
T5	80 - 60	1.648	27	0.1949	0.0119
T6	60 - 40	0.910	27	0.1425	0.0066
T7	40 - 20	0.395	27	0.0894	0.0035
T8	20 - 0	0.101	27	0.0372	0.0013

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	SP4-5.2	27	6.164	0.3646	0.1999	79378
148.00	PiROD 13' Top Mounted Platform w/handrails (Lattice)	27	6.006	0.3644	0.1829	79378
140.00	SP4-5.2	27	5.379	0.3604	0.1222	41500
137.00	4' Yagi antenna	27	5.147	0.3563	0.1057	34812
135.00	3' Side Mount Standoff	27	4.994	0.3527	0.0967	32055
133.00	4' Yagi antenna	27	4.843	0.3486	0.0891	29765
132.00	4' Yagi antenna	27	4.768	0.3464	0.0857	28738
130.00	3' Side Mount Standoff	27	4.619	0.3416	0.0798	26884
129.00	3' Side Mount Standoff	27	4.545	0.3392	0.0771	25941
127.00	4' Yagi antenna	27	4.399	0.3340	0.0724	24146
125.00	3' Side Mount Standoff	27	4.254	0.3287	0.0683	22584
118.00	3' Side Mount Standoff	27	3.767	0.3104	0.0552	19596
108.00	PiROD 12' T-Frame	27	3.123	0.2862	0.0356	19762
106.00	860 10025	27	3.001	0.2811	0.0320	19817
85.00	Omni 1"x3'	27	1.874	0.2118	0.0132	17447



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 226-5586

Job	DAYVILLE CT SC2	Page	10 of 10
Project	150 ft Self Supporting Tower	Date	15:56:16 07/14/15
Client	VERIZON	Designed by	kw

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail	
T1	150 - 140	Leg	1 1/2	2	-8010.57	48293.66	16.6	Pass	
T2	140 - 120	Leg	1 3/4	39	-36159.60	69797.88	51.8	Pass	
T3	120 - 100	Leg	Pirod 105216	103	-51862.30	122940.05	96.2	Pass	
T4	100 - 80	Leg	Pirod 105216	120	-94131.90	122940.05	76.6	Pass	
T5	80 - 60	Leg	Pirod 105217	135	-124096.00	184672.48	67.2	Pass	
T6	60 - 40	Leg	Pirod 105217	150	-149674.00	184672.48	81.0	Pass	
T7	40 - 20	Leg	Pirod 105217	165	-172725.00	184672.48	93.5	Pass	
T8	20 - 0	Leg	Pirod 105218	180	-194840.00	258238.08	75.5	Pass	
T1	150 - 140	Diagonal	5/8	10	-1724.68	2800.53	61.6	Pass	
T2	140 - 120	Diagonal	3/4	49	-3006.93	5712.96	52.6	Pass	
T3	120 - 100	Diagonal	L2 1/2x2 1/2x3/16	107	-7088.91	12224.85	58.0	Pass	
T4	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	128	-7038.25	10604.72	66.4	Pass	
T5	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	137	-5303.86	7761.69	68.3	Pass	
T6	60 - 40	Diagonal	L2 1/2x2 1/2x3/16	152	-5036.48	6237.73	80.7	Pass	
T7	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	167	-4939.57	5064.73	97.5	Pass	
T8	20 - 0	Diagonal	L3x3x3/16	181	-5776.75	7288.22	79.3	Pass	
T1	150 - 140	Horizontal	3/4	23	-40.67	2918.06	1.4	Pass	
T2	140 - 120	Horizontal	3/4	62	-415.35	2949.69	14.1	Pass	
T1	150 - 140	Top Girt	7/8	4	-271.68	5406.06	5.0	Pass	
T2	140 - 120	Top Girt	7/8	42	-529.40	5464.67	9.7	Pass	
T1	150 - 140	Bottom Girt	7/8	7	-473.74	5406.06	8.8	Pass	
T2	140 - 120	Bottom Girt	7/8	43	-910.01	5464.67	16.7	Pass	
T2	140 - 120	Mid Girt	7/8	46	-264.12	5464.67	4.8	Pass	
							Summary		
							Leg (T3)	96.2	Pass
							Diagonal (T7)	97.5	Pass
							Horizontal (T2)	14.1	Pass
							Top Girt (T2)	9.7	Pass
							Bottom Girt (T2)	16.7	Pass
							Mid Girt (T2)	4.8	Pass
							RATING =	97.5	Pass

ATTACHMENT 5

		General			Power		Density				
Site Name: Dayville SC 2 (Killingly)											
Tower Height: 150ft											
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total			
*Celwave PD1142 (QVEC)	1	80	150	0.0014	72.68	0.2000	0.07%				
*Celwave PD1142 (QVEC)	1	85	150	0.0015	33.9	0.2000	0.07%				
*Andrew DB222 (QVEC)	1	110	150	0.0019	150-170	0.2000	0.10%				
*RFS Station Master 201 (QVEC)	1	10	150	0.0002	465.6	0.3104	0.01%				
*RFS Station Master 201 (QVEC)	1	10	150	0.0002	458.38	0.3056	0.01%				
*RFS Station Master 201 (QVEC)	1	15	150	0.0003	450-470	0.3000	0.01%				
*Andrew DB420 (QVEC)	1	receive only									
*Radiowaves SP4-4.7 (QVEC)	1	5	150	0.0001	4.9	0.2000	0.00%				
*Radiowaves SP4-4.7 (QVEC)	1	5	140	0.0001	4.9	0.2000	0.01%				
*Andrew DB438 (QVEC)	1	30	135	0.0006	465.03	0.3100	0.02%				
*Andrew DB438 (QVEC)	1	20	135	0.0004	458.81	0.3059	0.01%				
*Andrew DB438 (QVEC)	1	30	135	0.0006	468.19	0.3121	0.02%				
*Andrew DB438 (QVEC)	1	30	130	0.0007	469.48	0.3130	0.02%				
*Andrew DB438 (QVEC)	1	30	130	0.0007	458.59	0.3057	0.02%				
*Diamond D130J (QVEC)	1	receive only									
*Andrew DB438 (QVEC)	1	30	125	0.0008	465.54	0.3104	0.02%				
*Andrew DB222 (QVEC)	1	receive only									
*Andrew DB225 (QVEC)	1	80	120	0.0022	72.68	0.2000	0.11%				
*AT&T	2	2033	108	0.1405	880	0.5867	2.40%				
*AT&T	3	2871	108	0.2978	1900	1.0000	2.98%				
*AT&T	2	1016	108	0.0703	700	0.4667	1.51%				
Verizon PCS	0	470	130	0.0000	1970	1.0000	0.00%				
Verizon Cellular	0	422	130	0.0000	869	0.5793	0.00%				
Verizon AWS	1	399	130	0.0085	2145	1.0000	0.85%				
Verizon 700	0	1050	130	0.0000	746	0.4973	0.00%				
								8.23%			
* Source: Siting Council											

ATTACHMENT 6

November 2, 2015

Via Certificate of Mailing

Sean Hendricks, Town Manager
Town of Killingly
172 Main Street
Danielson, CT 06239

Re: Proposed Installation of a “Small Cell” Telecommunications Facility on Property at 1249 Hartford Pike, Killingly, Connecticut

Dear Mr. Hendricks:

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 install an antenna and related equipment on the Quinebaug Valley Emergency Communications Inc. tower at 1249 Hartford Pike in Killingly (the “Property”). Cellco intends to install one (1) antenna and one (1) remote radio head at the 130-foot level on the tower. Two (2) equipment cabinets will be installed on a 8’ x 8’ concrete pad near the base of the tower.

As presented in the Sub-Petition, the proposed 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 notice of this filing along with a copy of the Sub-Petition.

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.

14254038-v1

Robinson + Cole

Sean Hendricks
November 2, 2015
Page 2

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

Sincerely,



Kenneth C. Baldwin

Attachment

November 2, 2015

Via Certificate of Mailing

Quinebaug Valley Emergency Communications Inc.
1249 Hartford Pike
Killingly, CT 06243

Re: **Proposed Installation of a “Small Cell” Telecommunications Facility on Property at 1249 Hartford Pike, Killingly, 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 install an antenna and related equipment on the Quinebaug Valley Emergency Communications Inc. tower at 1249 Hartford Pike in Killingly (the “Property”). Cellco intends to install one (1) antenna and one (1) remote radio head at the 130-foot level on the tower. Two (2) equipment cabinets will be installed on a 8’ x 8’ concrete pad near the base of the tower.

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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.

14254059-v1

Robinson + Cole


Quinebaug Valley Emergency Communications Inc.

November 2, 2015

Page 2

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Baldwin', written over a light blue 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

November 2, 2015

Via Certificate of Mailing

«Name_and_Address»

**Re: Proposed Installation of a “Small Cell) Telecommunications Facility at 1249
Hartford Pike, Killingly, 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 install an antenna and related equipment on the Quinebaug Valley Emergency Communications Inc. tower at 1249 Hartford Pike in Killingly (the “Property”). Cellco intends to install one (1) antenna and one (1) remote radio head at the 130-foot level on the tower. Two (2) equipment cabinets will be installed on a 8’ x 8’ concrete pad near the base of the tower.

As presented in the Sub-Petition, the proposed 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.

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.

November 2, 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", written in a cursive style.

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTING PROPERTY OWNERS

1249 HARTFORD PIKE, KILLINGLY, CONNECTICUT

	Property Address	Owner's and Mailing Address
1.	1252 Hartford Pike	Janet M. Hallbergh P.O. Box 157 East Killingly, CT 06243
2.	1260 Hartford Pike	John O. and Janet M. Hallbergh, Jr. P.O. Box 157 East Killingly, CT 06243
3.	1264 Hartford Pike	Raymond P. Stockwell P.O. Box 191 Killingly, CT 06241
4.	1270 Hartford Pike	Bryan S. Highley, Jr. 1270 Hartford Turnpike Danielson, CT 06239
5.	1275 Hartford Pike	John and Wanda M. Labbay P.O. Box 26 Killingly, CT 06243
6.	1235 Hartford Pike	St. James Roman Catholic Church 12 Franklin Street Killingly, CT 06239
7.	564 Valley Road	William G. and Barbara Abrams P.O. Box 131 East Killingly, CT 06243