

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

May 9, 2014

Melanie A. Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of an Existing Tower at 220 Winthrop Road, Deep River, Connecticut**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes (“C.G.S.”) §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby requests an order from the Connecticut Siting Council (“Council”) to approve the shared use by Cellco of an existing telecommunications tower, owned by SBA at 220 Winthrop Road in Deep River, Connecticut (the “Property”). Cellco requests that the Council find that the proposed shared use of the SBA tower satisfies the criteria of C.G.S § 16-50aa and issue an order approving the proposed shared use. A copy of this letter is being sent to Deep River’s First Selectman, Richard H. Smith. The Property is owned by the Town of Deep River.

### **Background**

The existing SBA facility consists of a 180-foot self-supporting monopole tower within a 50-foot by 50-foot fenced compound and 100-foot by 100-foot leased area. The tower is currently being shared by Sprint at the 166-foot level, T-Mobile at the 158-foot level and AT&T at the 150-foot level. Equipment associated with the wireless carriers’ antennas is located on the ground inside the fenced compound.



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12891900-v1

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Cellco is licensed by the Federal Communications Commission (“FCC”) to provide wireless services throughout the State of Connecticut. Cellco and SBA have agreed to the proposed shared use of the 220 Winthrop Road tower pursuant to mutually acceptable terms and conditions, and SBA has authorized Cellco to apply for all necessary permits and approvals that may be required to share the existing tower. (See Letter of Authorization included in Attachment 1).

Cellco proposes to install twelve (12) antennas at the 178-foot level on the tower. The top of Cellco’s antennas will extend to a height of 181 feet above ground level. Initially, Cellco will install three (3) remote radio heads (RRHs) behind its 700 MHz antennas.<sup>1</sup> Equipment associated with Cellco’s antennas will be located inside an existing 10’ x 20’ shelter located within the existing fenced-compound. This existing shelter was recently abandoned by Nextel. Cellco will also install a propane fueled back-up generator on a 4-foot by 8-foot concrete pad in the northeast corner of the fenced compound and a 1000 gallon propane tank (mounted vertically) in the southeast corner of the compound. Included in Attachment 2 are Cellco’s Project Plans showing limits of the facility compound and Leased Area, the location of all proposed site improvements, and a tower elevation drawing.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, “if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use.” Cellco respectfully submits that the shared use of the tower satisfies these criteria.

**A. Technical Feasibility.** The existing tower is capable of supporting Cellco’s antennas and related equipment. The proposed shared use of this tower is, therefore, technically feasible. A Structural Analysis Report is included in Attachment 3.

**B. Legal Feasibility.** Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the shared use of an existing tower such as the SBA tower in Deep River. This authority complements the Council’s prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council’s jurisdiction. In addition, § 16-50x(a) directs the Council to “give such consideration to other state laws and municipal regulations as it shall deem appropriate” in ruling on requests for the shared use of existing tower

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<sup>1</sup> According to the Structural Analysis included in Attachment 3, the tower is capable of supporting all proposed improvements and a total of six (6) RRHs for potential future growth.



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facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. **Environmental Feasibility.** The proposed shared use of the SBA tower would have a minimal environmental effect, for the following reasons:

1. The proposed installation of twelve (12) antennas and RRHs at the 178-foot level on the existing 180-foot tower would have an insignificant incremental visual impact on the area around the existing tower. Cellco would be the fourth wireless carrier to share this tower.

All of Cellco's site improvements will occur either at the top of the tower or within the existing 50-foot by 50-foot improved facility compound. Cellco will utilize a recently abandoned (10-foot by 20-foot) shelter in the northerly portion of the compound. Ground disturbance, for the installation of two small concrete pads associated with Cellco's generator and propane fuel tank, will occur within the limits of the existing improved compound. Cellco's shared use of this tower would therefore, not cause any significant change or alteration in the physical or environmental characteristics of the Property.

2. Noise associated with the equipment shelter's air conditioning ("A/C") units was evaluated for compliance with State and/or local noise standards. According to the Noise Compliance Study included in Attachment 4, noise from the shelter's A/C units will not exceed State and/or local noise limits. Noise associated with Cellco's emergency back-up generator is exempt from State and local noise standards.
3. Operation of Cellco's antennas at this site would not exceed the Maximum Permissible Exposure ("MPE") standards adopted by the Federal Communications Commission ("FCC"). Included in Attachment 5 of this filing is a cumulative worst-case General Power Density table confirming that the existing Sprint, T-Mobile and AT&T antennas together with the proposed Cellco antennas will operate well below the FCC's



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standards.

4. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the SBA facility other than periodic (monthly) maintenance visits to the cell site.

The proposed shared use of the SBA facility would, therefore, have a minimal environmental effect, and is environmentally feasible.

**D. Economic Feasibility.** As previously mentioned, SBA and Cellco have entered into a lease for the shared use of the existing tower on mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible. (See Attachment 1).

**E. Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting Cellco's full array of twelve (12) antennas, RRHs and related equipment. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing SBA tower. In fact, the provision of new and improved wireless service through shared use of the existing tower is expected to enhance the safety and welfare of area residents and members of the general public traveling in and through the Town of Deep River.

## **Conclusion**

For the reasons discussed above, the proposed shared use of the existing SBA tower at 220 Winthrop Road in Deep River satisfies the criteria stated in C.G.S. § 16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use of the SBA tower.

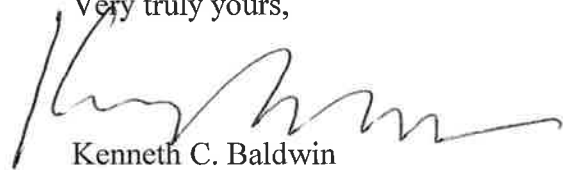


# ROBINSON & COLE<sup>LLP</sup>

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Thank you for your consideration of this matter.

Very truly yours,



Kenneth C. Baldwin

Enclosures

Copy to:

Richard H. Smith, First Selectman  
Sandy M. Carter



# **ATTACHMENT 1**

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5900 Broken Sound Parkway NW  
Boca Raton, FL 33487-2797



T + 561.995.7670  
F + 561.995.7626

[sbasite.com](http://sbasite.com)

## LETTER OF AUTHORIZATION

**SBA Site ID:** CT46130-A / Deep River-winthrop Rd

**Property Located at:** 220 Winthrop Rd , Deep River, CT, 06417

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**THE CITY/COUNTY OF:** Deep River / Middlesex

### APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes Verizon Wireless and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on our property referenced above on behalf of SBA 2012 TC Assets, LLC.

All approval conditions that may be granted to Verizon Wireless in connection with above referenced facility relating to this specific application are the sole responsibility of Verizon Wireless.

SBA 2012 TC Assets, LLC

A handwritten signature in black ink, appearing to read "Jason Silberstein".

Jason Silberstein

Executive VP, Site Leasing

Date: 4/11/2014

# **ATTACHMENT 2**



# Cellco Partnership

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

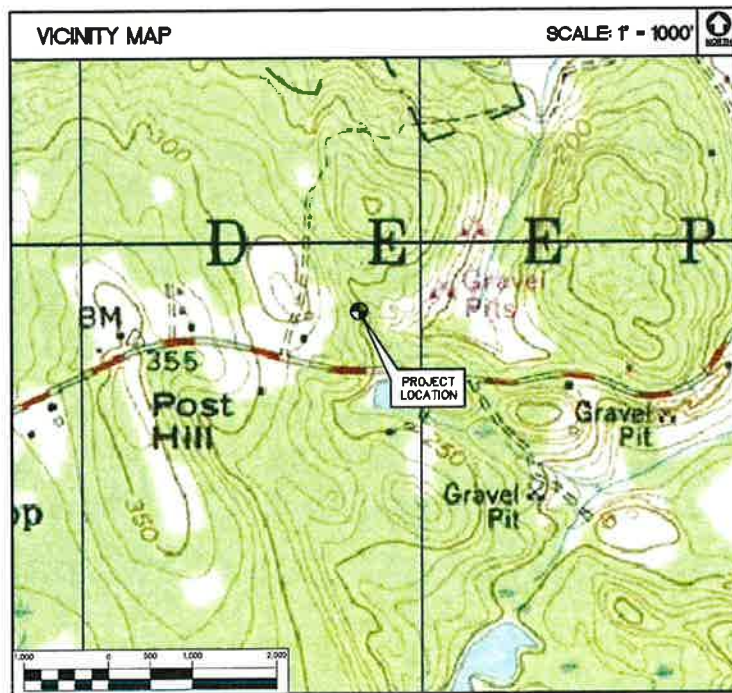
## WIRELESS COMMUNICATIONS FACILITY

DEEP RIVER WEST  
220 WINTHROP ROAD  
DEEP RIVER, CT 06147

SITE DIRECTIONS		
FROM:	TO:	
99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	220 WINTHROP ROAD DEEP RIVER, CONNECTICUT	
1. Head Southeast on E River Dr toward Pitkin St		0.9 mi
2. Continue onto E River Dr Extension		0.3 mi
3. Turn right onto US-5 S/CT-15 S ramp to New Haven/I-91 S		0.2 mi
4. Merge onto US-5 S		0.8 mi
5. Take exit B6 to merge onto I-91 S toward New Haven/New York City		8.9 mi
6. Take exit 22S on the left to merge onto CT-9 S toward Middletown/Old Saybrook		0.8 mi
7. Continue onto CT-17 S/CT-9 S		16.1 mi
8. Continue onto CT-9 S		0.3 mi
9. Take exit 5 for CT-80 toward Deep River/Killing Worth		1.1 mi
10. Turn right onto CT-80 W/Elm St		1.0 mi
11. Take the third right onto Transfer Station Rd		131 ft
12. Turn right onto Transfer Station Rd		184 ft
13. Slight left to stay on Transfer Station Rd		275 ft
14. Take the first right to stay on Transfer Station Rd, destination will be on the left		

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

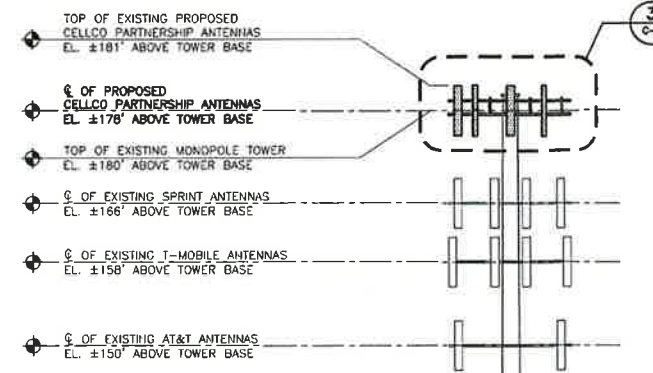
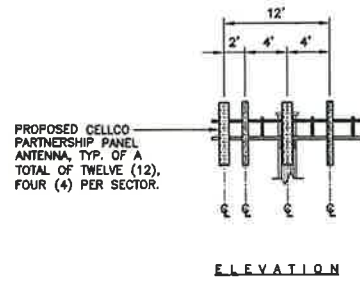
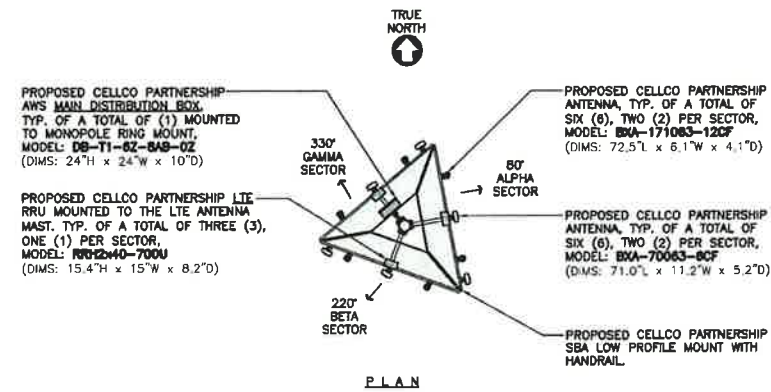
PROJECT SCOPE
1. THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE ACQUISITION OF A PREVIOUSLY INSTALLED 10'x20' PREFABRICATED WIRELESS EQUIPMENT SHELTER AND THE INSTALLATION OF AN EXTERNAL GENERATOR ON A CONCRETE FOUNDATION, BOTH LOCATED WITHIN THE EXISTING WIRELESS COMMUNICATIONS LEASE AREA.
2. A TOTAL OF TWELVE (12) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED ON AN EXISTING 180' TALL MONOPOLE TOWER AT A CENTERLINE ELEVATION OF 180' ABOVE FINISHED GRADE.
3. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND TO THE PROPOSED EQUIPMENT SHELTER FROM AN EXISTING UTILITY BACKBOARD LOCATED ADJACENT TO FENCED COMPOUND.



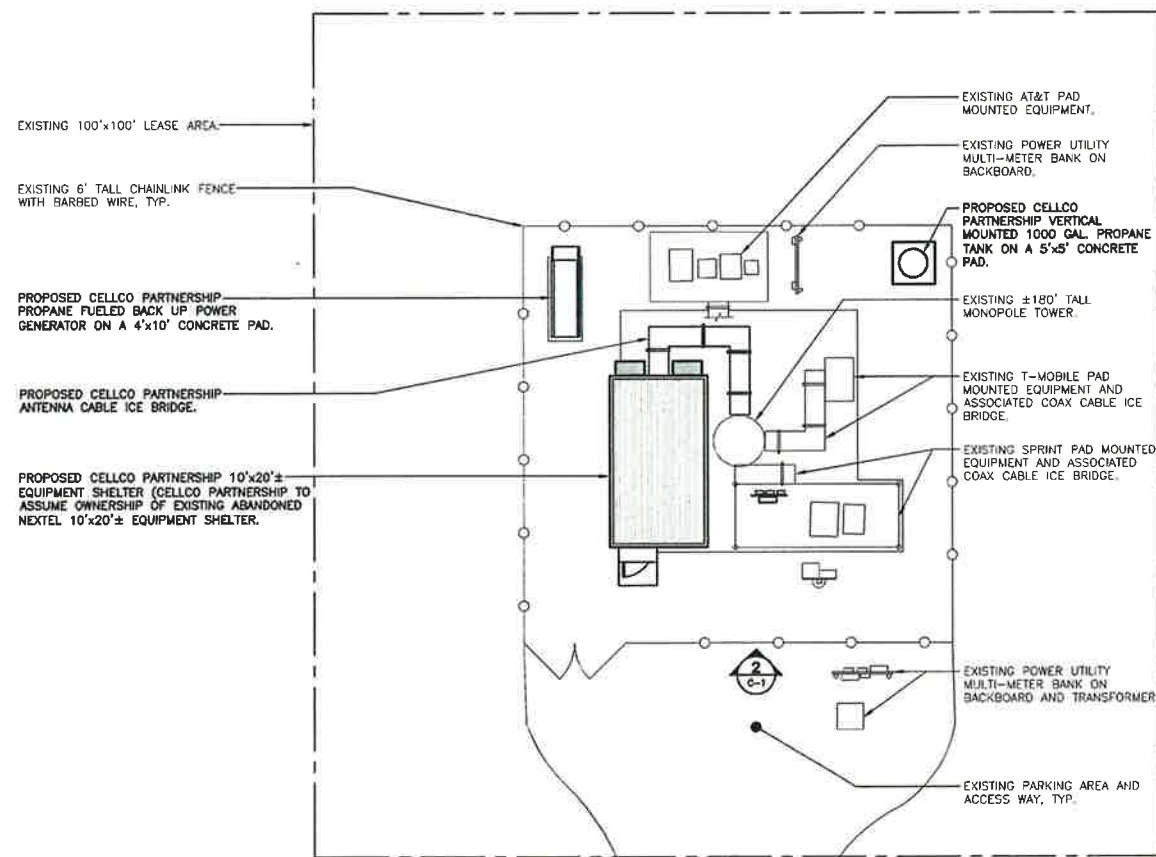
PROJECT SUMMARY	
SITE NAME:	DEEP RIVER WEST
SITE ADDRESS:	220 WINTHROP ROAD DEEP RIVER, CT 06147
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELCO PARTNERSHIP (860) 803-8219
TOWER COORDINATES:	LATITUDE: 41°-21'-54" LONGITUDE: 72°-28'-37" GROUND ELEVATION: 270'± A.M.S.L. COORDINATES & GROUND ELEVATION ARE BASED ON CONNECTICUT SITING COUNCIL DATABASE.

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	COMPOUND PLAN AND ELEVATION	0

PROFESSIONAL ENGINEER SEAL	ISSUED FOR CSC - CLIENT REVIEW
DATE: 04/29/14	DESCRIPTION
REV. 0	DATE: 04/29/14
REV. 1	DATE: 04/29/14
REV. 2	DATE: 04/29/14
REV. 3	DATE: 04/29/14
REV. 4	DATE: 04/29/14
REV. 5	DATE: 04/29/14
REV. 6	DATE: 04/29/14
REV. 7	DATE: 04/29/14
REV. 8	DATE: 04/29/14
REV. 9	DATE: 04/29/14
REV. 10	DATE: 04/29/14
REV. 11	DATE: 04/29/14
REV. 12	DATE: 04/29/14
REV. 13	DATE: 04/29/14
REV. 14	DATE: 04/29/14
REV. 15	DATE: 04/29/14
REV. 16	DATE: 04/29/14
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REV. 97	DATE: 04/29/14
REV. 98	DATE: 04/29/14
REV. 99	DATE: 04/29/14
REV. 100	DATE: 04/29/14



**3 ANTENNA MOUNTING CONFIGURATION**  
C-1 NOT TO SCALE

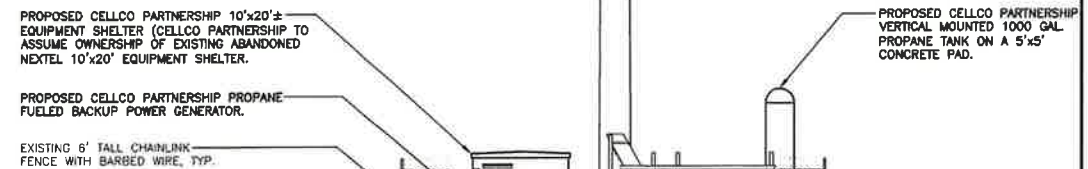


**1 COMPOUND PLAN**  
C-1 SCALE: 1" = 10'

APPROXIMATE NORTH



**TOWER NOTES:**  
1. REFER TO STRUCTURAL ANALYSIS REPORT AND STRUCTURAL DESIGN DRAWINGS AS PREPARED BY FDM ENGINEERING, INC., PROJECT NUMBER: 13SFRX1400 DATED: NOVEMBER 4, 2013



**2 SOUTHWEST ELEVATION**  
C-1 SCALE: 1" = 10'



PROFESSIONAL ENGINEER SEAL	ISSUED FOR CSC - CLIENT REVIEW
DATE	04/23/14
SCALE	AS NOTED
JOB NO.	1.3283.000
COMPOUND PLAN AND ELEVATION	
<b>C-1</b>	
Sheet No. 2 of 2	

**Cellco Partnership d/b/a Verizon Wireless**  
WIRELESS COMMUNICATIONS FACILITY  
**DEEP RIVER WEST**  
220 WINTHROP ROAD  
DEEP RIVER, CT 06447

**CENTEK Engineering**  
Central Connecticut  
(203) 488-0580  
(203) 488-8587 Fax  
43-2 North Branch Road  
Branford, CT 06405  
www.CentekEng.com

# **ATTACHMENT 3**



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for  
SBA Network Services, Inc.**

**180' Monopole Tower**

**SBA Site Name: Deep River-Winthrop Rd  
SBA Site ID: CT46130-A-00  
Verizon Site ID: 262760**

FDH Project Number 13SFRX1400

**Analysis Results**

Tower Components	89.0%	Sufficient
Foundation	89.9%	Sufficient

Prepared By:

Logan Poe, EI  
Project Engineer

Reviewed By:

Bradley Newman, PE  
Senior Project Engineer

**FDH Engineering, Inc.**  
6521 Meridien Drive  
Raleigh, NC 27616  
(919) 755-1012  
info@fdh-inc.com



November 4, 2013

*Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and the 2005 Connecticut Building Code (CBC)*

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## EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Deep River, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F* and the *2005 Connecticut Building Code (CBC)*. Information pertaining to the existing/proposed antenna loading, foundation dimensions, current tower geometry, geotechnical data, and member sizes was obtained from:

- Valmont Industries, Inc. (Order No. 17593-98) Communication Pole Design Calculations dated October 27, 2000
- Valmont Industries, Inc. (Order No. 17593-98) Communication Pole Permit Drawings dated June 22, 1998
- Valmont Industries, Inc. (Order No. 17593-98) original foundation drawings dated August 11, 1998
- Tectonic Engineering Consultants P.C. (W.O. 1170.C750) Geotechnical Evaluation dated July 13, 1998
- Morrison Hershfield Corporation (Project No. TC0-128/6123226) Structural Analysis Report dated August 15, 2012
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and the *2005 CBC* is 85 mph without ice and 36 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

## Conclusions

With the existing and proposed antennas from Verizon in place at 178 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and the *2005 CBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Valmont Industries, Inc. Order No. 17593-98), the foundation should have the necessary capacity to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

## Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards and the *2005 CBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax should be installed inside the pole's shaft.
2. RRU/RRH Stipulation: The equipment may be installed in any arrangement as determined by the client.

**APPURTENANCE LISTING**

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

**Table 1 - Appurtenance Loading**

**Existing Loading:**

Antenna Elevation (ft)	Description	Feedlines <sup>1</sup>	Carrier	Mount Elevation (ft)	Mount Type
178	(9) Decibel DB844H90E-XY	(9) 1-5/8"	---	178	(1) Platform w/ Handrails
166	(6) Decibel DB980H90E-M	(6) 1-5/8"	Sprint/Nextel	166	(1) Platform w/ Handrails
158	(6) EMS RR90-17-02DP (6) Stella Dooradus SD-RP1000P (PCS 1900) TMA's	(6) 1-5/8"	T-Mobile	158	(3) T-Arms
150	(2) KMW AM-X-CD-16-65-00T-RET (1) KMW AM-X-CD-14-65-00T (3) Powerwave 7770 (6) Powerwave LGP21401 TMA's (6) Ericsson RRUS-11 RRUs (1) Raycap DC6-48-60-18-8F Surge Arrestor	(12) 1-1/4" (1) 10 mm (2) 19.7 mm	New Cingular	150	(1) Low Profile Platform

1. Coax installed inside the pole's shaft unless otherwise noted.
2. The proposed loading at 178' for Verizon will replace the existing loading at 178'.

**Proposed Loading:**

Antenna Elevation (ft)	Description	Feedlines	Carrier	Mount Elevation (ft)	Mount Type
178	(6) Amphenol BXA-70063-6CF-2 (6) Amphenol BXA-171063-12CF-2 (3) ALU RRH2X40-AWS RRUs (3) ALU RRH2X40-07-U RRUs (1) RFS DB-B1-6C-8AB-OZ Diplexers	(2) 1-5/8" Fiber Cables	Verizon <sup>1</sup>	178	(1) Platform w/ Handrails

1. The proposed loading at 178' for Verizon will replace the existing loading at 178'.

## RESULTS

The following yield strength of steel for individual members was used for analysis:

**Table 2 - Material Strength**

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	60 ksi
Anchor Bolts	75 ksi

**Table 3** displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. *Note: Capacities up to 100% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

**Table 3 - Summary of Working Percentage of Structural Components**

Section No.	Elevation ft	Component Type	Size	% Capacity*	Pass Fail
L1	180 - 133.333	Pole	TP30.929x19.36x0.25	70.2	Pass
L2	133.333 - 90.1667	Pole	TP41.138x29.2721x0.3438	81.2	Pass
L3	90.1667 - 43.9167	Pole	TP51.913x39.0034x0.4063	81.8	Pass
L4	43.9167 - 0	Pole	TP62x49.3448x0.4375	89.0	Pass
		Anchor Bolts	(20) 2.25"Ø on 70.69" BC	78.4	Pass
		Base Plate	76.69"Ø PL x 2.75" thk.	57.1	Pass

\*Capacities include 1/3 allowable stress increase for wind per TIA/EIA-222-F standards.

**Table 4 - Maximum Base Reactions**

Base Reactions	Current Analysis (TIA/EIA-222-F)	Original Design (TIA/EIA-222-F)
Axial	44 k	48 k
Shear	39 k	42 k
Moment	4,565 k-ft	5,076 k-ft



## **GENERAL COMMENTS**

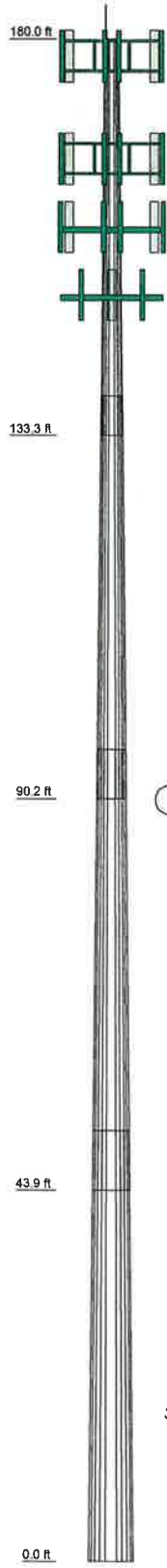
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

## **LIMITATIONS**

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

## **APPENDIX**

Section	1	2	3	4
Length (ft)	48.87	47.83	52.08	51.00
Number of Sides	12	12	12	12
Thickness (in)	0.2500	0.3438	0.4063	0.4375
Socket Length (ft)	4.67	5.83	7.08	48.3448
Top Dia (in)	19.3600	29.2721	39.0034	62.0000
Bot Dia (in)	30.9290	41.1390	51.9130	13.5
Grade			A572-65	
Weight (K)	3.2	6.3	10.4	13.5



### DESIGNED APPURTENANCE LOADING

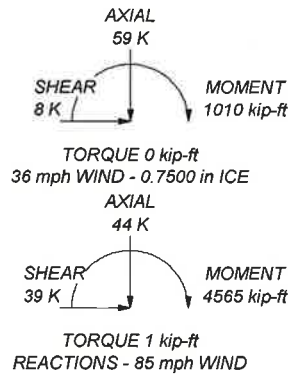
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	180	(2) RR90-17-02DP w/Mount Pipe	158
(2) BXA-70063-8CF-2 w/ Mount Pipe	178	(2) SD-RP1000P (PCS 1900) TMA	158
(2) BXA-70063-8CF-2 w/ Mount Pipe	178	(2) SD-RP1000P (PCS 1900) TMA	158
(2) BXA-70063-8CF-2 w/ Mount Pipe	178	(2) SD-RP1000P (PCS 1900) TMA	158
(2) BXA-171063-12CF-2 w/ Mount Pipe	178	(3) T-Arms	158
(2) BXA-171063-12CF-2 w/ Mount Pipe	178	(2) LGP21401 TMA	150
(2) BXA-171063-12CF-2 w/ Mount Pipe	178	(2) LGP21401 TMA	150
RRH2X40-AWS	178	(2) RRUS-11	150
RRH2X40-AWS	178	(2) RRUS-11	150
RRH2X40-AWS	178	(2) RRUS-11	150
RRH2X40-07-U	178	DC8-48-60-18-8F Surge Arrestor	150
RRH2X40-07-U	178	Low Profile Platform	150
RRH2X40-07-U	178	AM-X-CD-16-65-00T-RET w/ Mount Pipe	150
DB-B1-6C-8AB-OZ Diplexer	178	AM-X-CD-16-65-00T-RET w/ Mount Pipe	150
Platform w/ Handrails	178	AM-X-CD-14-65-00T w/ Mount Pipe	150
(2) DB980H90E-M w/ Mount Pipe	166	7770.00 w/Mount Pipe	150
(2) DB980H90E-M w/ Mount Pipe	166	7770.00 w/Mount Pipe	150
(2) DB980H90E-M w/ Mount Pipe	166	7770.00 w/Mount Pipe	150
Platform w/ Handrails	166	7770.00 w/Mount Pipe	150
(2) RR90-17-02DP w/Mount Pipe	158	(2) LGP21401 TMA	150
(2) RR90-17-02DP w/Mount Pipe	158		

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

### TOWER DESIGN NOTES

1. Tower is located in Middlesex 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 36 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 89%



 Tower Analysis	<b>FDH Engineering, Inc.</b> 6521 Meriden Drive Raleigh, NC 27616 Phone: 919-7551012 FAX: 919-7552031	<b>Job: Deep River - Winthrop Rd., CT46130-A-00</b> Project: 13SFRX1400	Drawn by: Logan Poe Date: 11/04/13	App'd: Scale: NTS Dwg No. E-1
	Client: SBA	Code: TIA/EIA-222-F	Path:	

# **ATTACHMENT 4**



HMB Acoustics LLC

3 CherryTree Lane, Avon, Ct. 06001

860-677-5955

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May 2, 2014

Carl Pappalardo  
Project Engineer  
Centek Engineering Inc.  
63-2 North Branford Road  
Branford, Ct. 06405

Subject: Verizon Deep River West - CSC Noise Compliance Study

Dear Mr. Pappalardo:

The noise levels for the V-1 and V-2 wall mounted HVAC units were calculated while the two units were running simultaneously. The combined noise level was then projected to each property line. The resultant noise levels were compared to the State of Ct. Noise Regulation.

The Regulation allows a noise level of 55 dBA (daytime) and 45 dBA (nighttime), when measured at a Residential Receptor's property line. I found that the two HVAC units running together meet the conditions for compliance as set forth in the Regulation at all property lines.

Allan Smardin  
HMB Acoustics LLC

<b>PROJECT INFORMATION:</b>	<b>Centek Job #:</b> 13283.000
<b>Applicant:</b> Cellco Partnership d.b.a. Verizon Wireless	
<b>Applicant Site ID:</b> DEEP RIVER WEST	
<b>Site Owner:</b> SBA	
<b>Site Address:</b> 220 WINTHROP ROAD, DEEP RIVER, CT	
<b>Subject Zoning District:</b> Preservation and Recreation	
<b>Abutting Zoning District(s):</b> Residential to the West Preservation and Recreation to the Southeast	

<b>APPLICANT EQUIPMENT:</b>						
ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West
V-1	Wall Mounted HVAC	Marvair / AVP36ACA-10C	135	532	206	132
V-2	Wall Mounted HVAC	Marvair/ AVP36ACA-10C	139	530	199	135

<b>EXISTING COLOCATORS:</b>						
<input checked="" type="checkbox"/> AT&T	<input type="checkbox"/> Metro PCS	<input type="checkbox"/> Other:				
<input checked="" type="checkbox"/> Sprint	<input checked="" type="checkbox"/> T Mobile	<input type="checkbox"/> Other:				
<input type="checkbox"/> Nextel	<input type="checkbox"/> None	<input type="checkbox"/> Other:				

<b>EXISTING COLOCATOR EQUIPMENT OWNER:</b>						
ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

<b>EXISTING COLOCATOR EQUIPMENT OWNER:</b>						
ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

**EXISTING COLOCATOR EQUIPMENT OWNER:**

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

**EXISTING COLOCATOR EQUIPMENT OWNER:**

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

**EXISTING COLOCATOR EQUIPMENT OWNER:**

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

**CONCLUSION:**

<b>Daytime Regulation:</b> 55 dBA	<b>Nighttime Regulation:</b> 45 dBA
<b>Compliance:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Compliance:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**BASIS OF FINDINGS:**

The Combined noise level from V-1 and V-2

North property line = 38 dBA      South property line = 23 dBA

East property line = 31 dBA      West property line = 38 dBA

The dBA levels take into account the acoustical shielding effect provided by other structures on the property.

AT&T; Sprint; and T-Mobile have pad mounted equipment on site with self contained HVAC units, all of which become inaudible at a distance of 20 feet.

Prepared By: Alan Smardin, HMB ACOUSTICS LLC

Date: 5-2-14

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	05/01/14	CTP	DMD	NOISE EXAMINER INFORMATION

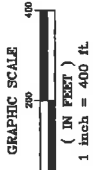
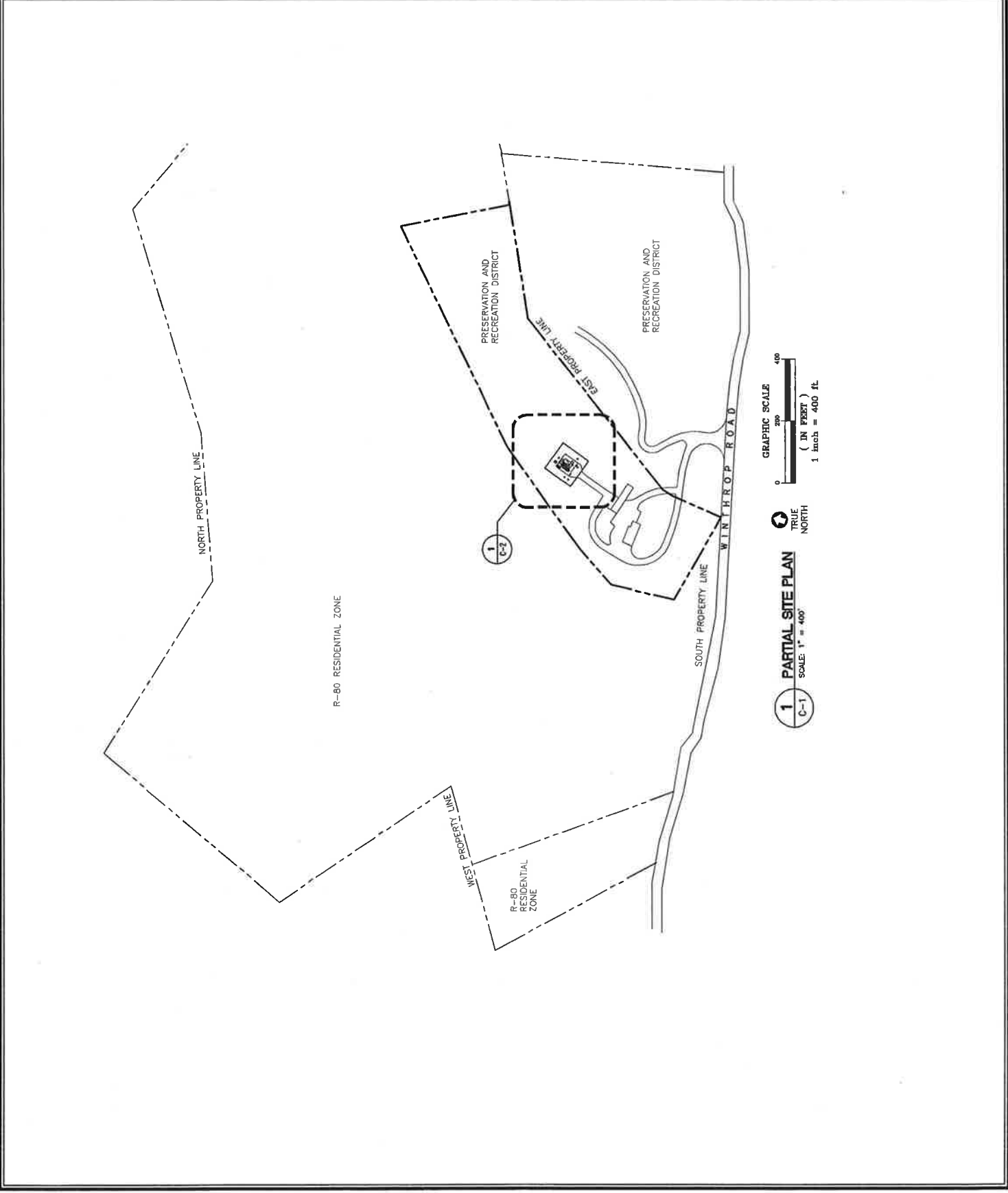


**CENTERK** engineering  
 Centered on Solutions™  
 www.Centerkng.com  
 (203) 488-0380  
 (203) 488-8377 Fax  
 43-2 North Branford Road, Branford, CT 06405

**DEEP RIVER WEST**  
 Celco Partnership dba Verizon Wireless  
 220 WINTHROP ROAD  
 DEEP RIVER, CT  
 DATE: 05/01/14  
 SCALE: AS NOTED  
 JOB NO. 13283.000

**PARTIAL  
 SITE PLAN**

**C-1**  
 DWG. 1 OF 2

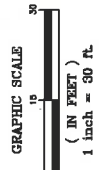
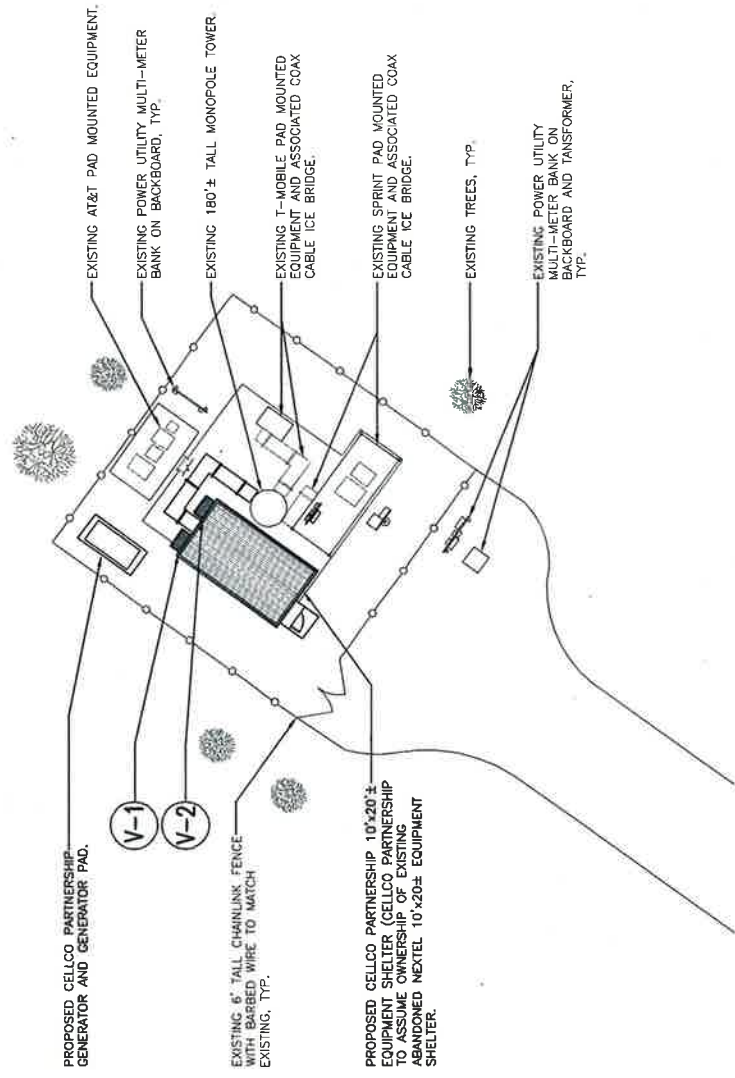


**1**  
 C-1  
**PARTIAL SITE PLAN**  
 SCALE: 1" = 400'



**NOISE EMMITTER INFORMATION**

- (V-1) WALL MOUNTED HVAC UNIT, MAKE: MARVAIR, MODEL: AVP36ACA-10C
- (V-2) WALL MOUNTED HVAC UNIT, MAKE: MARVAIR, MODEL: AVP36ACA-10C



**1** COMPOUND PLAN - PROPOSED  
C-2 SCALE: 1" = 30'-0"

REV.	DATE	BY	CHK'D	DESCRIPTION
0	05/01/14	CTP	DMD	NOISE EMMITTER INFORMATION



**CENTER** engineering  
Centered on Solutions™  
www.Centering.com  
(203) 466-8387 Fax  
(203) 466-8380  
63-2 North Bedford Road, Bedford, CT 06405

**DEEP RIVER WEST**  
220 WINTHROP ROAD  
DEEP RIVER, CT  
Celco Partnership d/b/a Verizon Wireless  
DATE: 05/01/14  
SCALE: AS NOTED  
JOB NO. 13283.0003

**COMPOUND PLAN**

# **ATTACHMENT 5**

Site Name: Deep River W Tower Height: 180Ft		General		Power		Density							
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*AT&T UMTS	2	565	150	0.0181	880	0.5867	3.08%						
*AT&T UMTS	2	875	150	0.0280	1900	1.0000	2.80%						
*AT&T GSM	1	283	150	0.0045	880	0.5867	0.77%						
*AT&T GSM	4	525	150	0.0336	1900	1.0000	3.36%						
*AT&T LTE	1	1313	150	0.0210	734	0.4893	4.29%						
*Nextel	9	100	178	0.0102	851	0.5673	1.80%						
*Sprint	11	374.5	167	0.0531	1962.5	1.0000	5.31%						
*VoiceStream	4	275	160	0.0155	1930	1.0000	1.55%						
<b>Verizon</b>	<b>11</b>	<b>382</b>	<b>178</b>	<b>0.0477</b>	<b>1970</b>	<b>1.0000</b>	<b>4.77%</b>						
<b>Verizon</b>	<b>9</b>	<b>370</b>	<b>178</b>	<b>0.0378</b>	<b>869</b>	<b>0.5793</b>	<b>6.52%</b>						
<b>Verizon</b>	<b>1</b>	<b>1828</b>	<b>178</b>	<b>0.0207</b>	<b>2145</b>	<b>1.0000</b>	<b>2.07%</b>						
<b>Verizon</b>	<b>1</b>	<b>775</b>	<b>178</b>	<b>0.0088</b>	<b>698</b>	<b>0.4653</b>	<b>1.89%</b>						<b>38.20%</b>
* Source: Siting Council													