STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

21	
:	PETITION NO.
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¥5	JUNE 29, 2016

PETITION FOR A DECLARATORY RULING: INSTALLATION HAVING NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State

Agencies ("R.C.S.A."), Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby petitions the

Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that no

Certificate of Environmental Compatibility and Public Need ("Certificate") is required under

Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") to attach a new

telecommunications tower mast to an existing warehouse building at 1247 New Haven Road

(Route 63) in Naugatuck, Connecticut (the "Property"). The Property is owned by Naugatuck

Partners LLC. Cellco identifies this site as its "Naugatuck 4 Facility".

II. Factual Background

The Property is a 5.3- acre parcel in Naugatuck's "New Haven Road Design" zoning district and is used for industrial/warehouse purposes. The Property is surrounded by commercial and residential land uses. See Attachment 1 — Site Vicinity and Site Schematic Maps

(Aerial Photograph).

On June 3, 2003, AT&T received Special Permit and Zoning Permit approvals from the Borough of Naugatuck (the "Borough") to install four (4) mast-mounted antennas along the southern façade of the existing warehouse building on the Property. These individual masts extend to a height of approximately 35.2 feet above grade (approximately 16.5 feet above the roof of the warehouse building). Equipment associated with AT&T's antennas is located on the ground, adjacent to the building. On April 6, 2009, Metro PCS¹ received Zoning Permit approval from the Borough to install a single tower mast supporting two antennas along the same southerly façade of the building. The Metro PCS mast and antennas extend to a height of approximately 32.6 feet above grade approximately 14 feet above the roof of the building. Equipment associated with the Metro PCS antennas is located inside the warehouse building. Copies of the AT&T and Metro PCS approvals from the Borough are included in <u>Attachment 2</u>.

III. Proposed Naugatuck 4 Facility

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Naugatuck and throughout the State of Connecticut. Cellco has identified a need for improved wireless service along Route 63 and to the surrounding commercial and residential areas in southeast Naugatuck.

The proposed Naugatuck 4 Facility would consist of a small tower mast attached to the northerly facade of the warehouse building on the Property. The tower will support six (6) panel antennas (two (2) sectors of three (3) antennas each) and four (4) remote radio heads ("RRHs"). The top of Cellco's antennas will extend to a height of approximately 53.6 feet above grade

¹ At the time of the Metro PCS filing the name listed on the permit application was Pocket Communications.

along the north side of the building² (approximately 35' above the roof of the warehouse building). Equipment associated with Cellco's antennas and a natural gas-fueled back-up generator will be located on a 12' x 26' equipment platform and canopy structure, installed at grade along the south side of the building. The equipment will be surrounded by an 8' tall chain link fence. Power and telephone service to Cellco's Naugatuck 4 Facility will extend from the existing utility backboard near the southeast corner of the building. (*See* Cellco's Project Plans included in <u>Attachment 3</u>). Specifications for Cellco's antennas, RRHs and back-up generator are included in Attachment 4.

IV. Discussion

A. The Proposed Facility Modifications Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the "Act"), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications towers in the state to avoid "a significant impact on the environment and ecology of the State of Connecticut." C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and requires a Certificate of Environmental Compatibility and Public Need for the construction of cellular telecommunication towers "that may, as determined by the council, have a substantial adverse environmental effect". C.G.S. § 16-50k(a).

Physical Environmental Effects

Cellco respectfully submits that the installation of a tower mast supporting antennas and RRHs, attached to the existing warehouse building, and the placement of radio equipment and a back-up generator on a platform along the south side of the warehouse building will not involve a

² The ground elevation on the north side of the building is approximately 15.6 feet higher than the ground elevation on the south side of the building. (See Plan Sheet C-3).

significant alteration in the physical and environmental characteristics of the Property. The only ground disturbance associated with the Naugatuck 4 Facility equipment platform will occur within the limits of the existing paved parking area to the south of the building.

2. Visual Effects

Cellco submits that the Naugatuck 4 Facility would have minimal visual effects on the Property and the surrounding area. (*See* Visual Assessment & Photo-Simulations ("Visual Assessment") included in <u>Attachment 5</u>). As discussed in the Visual Assessment, the visibility of the proposed tower mast and antennas would be limited to locations on the Property. Views of the tower mast and antennas from surrounding parcels, especially those residential parcels to the south, are sufficiently obstructed by the existing vegetation.

3. Wetlands Inspection Report

According to a Wetland Inspection report prepared by Dean Gustafson at APT, a portion of Beacon Hill Brook runs along the southerly boundary of the Property. Wetland limits associated with Beacon Hill Brook were flagged in the field and are shown on Project Plan Sheet C-2. Cellco's proposed equipment platform is located within approximately 44 feet of Wetland Flag 1-19. Due to the nature of Cellco's development proposal and since the existing industrial development on the Property encroaches closer to the wetland/watercourse than Cellco's proposed improvements, Mr. Gustafson does not expect the Cellco facility would have impacts on the existing wetland area. This determination assumes the proper installation and maintenance of erosion and sedimentation controls throughout the construction period, a monitoring of these control measures and environmental compliance awareness training for facility contractors. A copy of Mr. Gustafson's wetlands inspection report is included in Attachment 6.

4. FCC Compliance

Radio frequency ("RF") emissions from the proposed installation will be well below the standards adopted by the Federal Communications Commission ("FCC"). Included in

Attachment 7 are far field approximation tables, that demonstrate that Cellco's Naugatuck 4

Facility will operate well within the FCC safety standard.

5. FAA Summary Report

Included in <u>Attachment 8</u> is a Federal Airways & Airspace Summary Report (the "FAA Report") verifying that the tower mast and antennas attached to the building at the Property would not constitute an obstruction or hazard to air navigation and that notification to the FAA is not required.

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

On June 29, 2016, a copy of this Petition was sent to Naugatuck's Mayor, N. Warren Hess III, and to Naugatuck Partners LLC, the owner of the Property. Copies of the letters sent to the Mayor and the Property owner are included in <u>Attachment 9</u>.

A copy of Cellco's Petition was also sent to the owners of land that abuts the Property. A sample abutter's letter, and the list of those abutting landowners to whom notice and a copy of the Petition was sent is included in <u>Attachment 10</u>. An Abutters Map is also included on Project Plan Sheet C-1 in Attachment 2.

V. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a tower mast attached to the building, supporting antennas and associated equipment and the installation of ground-mounted equipment at the Property will not have a substantial adverse environmental

effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

у____

Kenneth C. Baldwin, Esq. Robinson & Cole LLP

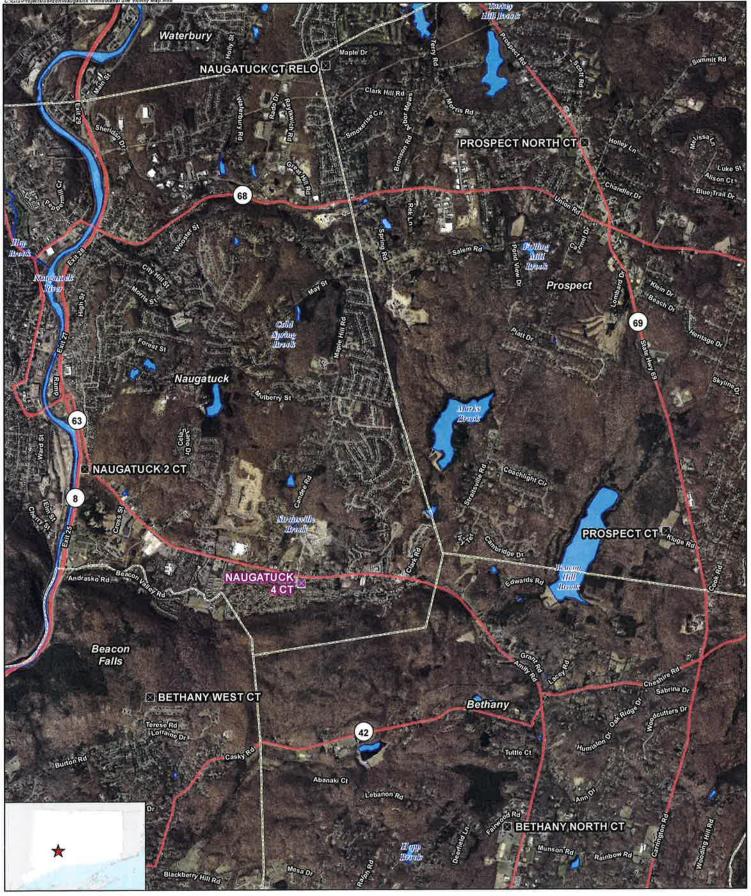
280 Trumbull Street

Hartford, CT 06103-3597

(860) 275-8200

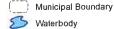
Its Attorneys

ATTACHMENT 1



Legend

- Surrounding Verizon Wireless Facilities





Site Vicinity Map

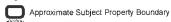
Proposed Wireless Telecommunications Facility Naugatuck 4 1247 New Haven Road Naugatuck, Connecticut

verizon/



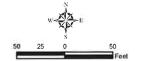


Legend



Existing AT&T Equipment

Proposed Verizon Wireless 12'x26' Fenced Lease/Equipment Area Approximate Parcel Boundary



Site Schematic

Proposed Wireless Telecommunications Facility Naugatuck 4 1247 New Haven Road Naugatuck, Connecticut





ATTACHMENT 2



BOROUGH OF NAUGATUCK

INLAND WETLANDS &
PLANNING COMMISSIONS
ZONING BOARD OF APPEALS
ZONING COMMISSION

203 720-7042 203 720-7040 203 720-7039

LAND USE OFFICE 2ND FLOOR - TOWN HALL 229 CHURCH STREET NAUGATUCK, CT 06770

SPECIAL PERMIT

I HEREBY CERTIFY THAT Bart Lokusso and Son OWNER OF	2
mus No Hun Ro	*
RECORD, OWNERS ADDRESS 1247 New Haven Road WAS	
GRANTED A SPECIAL PERMIT FOR PROPERTY AT	- 1
1247 New Haven Road, Naugatock, CT.	4 100 _ 6
THE MEETING OF THE ZONING COMMISSION WAS HELD:	e %a
DAY Wednesday DATE 5/21/03	(#)
FOR THE PURPOSE OF:	5
4 PCS ANTENNA	
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CONDITIONS: NONE	13
- Diffinity DIS	
SIGNED: Frobert Mapare KR Med Dotal	6/3/03
ZONING CHAIR ZONING ENFORCEMENT OFFICER	115

PLEASE HAVE THIS RECORDED IN THE TOWN CLERK'S OFFICE AS SOON AS POSSIBLE AFTER THE EFFECTIVE DATE, OR NO BUILDING PERMIT WILL BE ISSUED.

recorded 6/3/03 DOC. # 4136



BOROUGH OF NAUGATUCK

MEANLIME TEANUS COMMISSION TEANNING COMMISSION ZONING HOARD OF ARREAUS ZONING COMMISSION

LAND USE OFFICE 213 CHURCH STREET NAUGATUCK, CT 06770 203/729-4571

//2
PERMIT NO. 2003 - 136 DATE 6/3 19
PERMISSION TO: (BUILD) (MAKE ALTERATIONS) (BUILD ON ADDITION)
A FAMILY DWELLING, OR OTHER
PCS Tower a/ 4 Antennae
DESCRIPTION OF PREMISES: ZONE
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Permet Televoled 6/3/03
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THIS APPROVAL IS SUBJECT TO COMPLIANCE (PRIOR TO OCCUPANCY) WITH THE PROVISIONS OF THE ZONING REGULATIONS AND THE SUBDIVISION REGULATIONS OF THE BOROUGH OF NAUGATUCK (WHERE APPLICABLE) AND AS AUTHORIZED UNDER SECTION 8 OF THE CONNECTICUT GENERAL STATUTES, AS AMENDED. THIS PERMIT IS FASED UPON THE PLOT PLAN SUBMITTED. FALSIFICATION BY MISREPRESENTATION OR OMISSION SHALL CONSTITUTE A VIOLATION OF THE BOROUGH ZONING REGULATIONS.

BOROUGH OF NAUGATUCK

INLAND WETLANDS & PLANNING COMMISSIONS ZONING BOARD OF APPEALS ZONING COMMISSION

203 720-7042 203 720-7040 203 720-3396

ZONING PERMIT

LAND USE OFFICE 2ND FLOOR - TOWN HALL . 229 CHURCH STREET NAUGATUCK, CT 06770

O
PERMIT NO: 2009 - 15 DATE 4-6 2009
PERMISSION TO: (BUILD) (MAKE ALTERATIONS) (BUILD AN ADDITION)
A FAMILY DWELLING, OR OTHER VACANT COMMERCIAL DESCRIPTION OF PREMISES: ZONE NEXTENDED VALUE
The state of the s
PROPERTY OWNER: Naugatick fartners LLC.
ADDRESS: 1247 N. Haven Rd
APPLICANT: Thomas Shevlin on behalf of Pooled" Communication To install
YZONING THE APPLICANT STATES THAT THIS
PROPOSED STRUCTURE IS:
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COURSE AREA.
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4. IS NOT IN AFLOOD PLAIN AREA.
a c.c.
GRANTED DATE 4601
SIGNATURE OF APPLICANT - I
HILLOW THAT THE IN-
ZONING ENFORCEMENTOFFICER FORMATION HEREIN AND THE
ATTACHED PLOT PLAN IS
ACCURATE.
ADDRESS AND PHONE

THIS APPROVAL IS SUBJECT TO COMPLIANCE (PRIOR TO OCCUPANCY) PROVISIONS OF THE ZONING AND SUBDIVISION THE THE BOROUGH OF NAUGATUCK AND AS REGULATIONS OF AUTHORIZED UNDER SECTION 8 OF THE CONNECTICUT GENERAL STATUTES, AS AMENDED. THIS PERMIT IS BASED UPON THE PLOT PLAN SUBMITTED. FALSIFICATION BY MISREPRESENTATION OR OMISSION SHALL CONSTITUTE A VIOLATION OF THE BOROUGH REGULATIONS.

BOROUGH OF NAUGATUCK LAND USE DEPAPARTMENT

Phone 203-720-7042 Fax 203-720-5026 229 Church St. 2nd Fl Naugatuck, CT. 06770

ZON	ING COMPLIANCE PERM	<u>rr</u>
PERMIT NO: 2012 - 86		DATE_5/17/12
Type of Permit:		Size:
Addition Change of Use Deck	Detached Garage Fence Shed	Sign Swimming Pool Other
Old Use	New Use	
DESCRIPTION OF PREMISES:	6/5	
SingleFamilyMultiFamily_	Other	ZONE
PROPERTY OWNER: 1247	NOW HAVEN	LORUSSO
ADDRESS: 4	Y PHONE:	
APPLICANT: CHRIS BISS	ON_	
The applicant states that the proposed state 1. A wetlands or water course area; 2. 100 feet of a stream or wetlands area 3. A stream encroachment area; a flood 4. A flood plain area. Signature of Applicant I hereby certify that the information here	; plain area;	Transcend Wireless LLC 18 Industrial Ave Mahwah, NJ 07430 P:203-217-6200 cbisson@transcendwireless.cor
Applicable Zoning Regulation to appl	y: CEC AN	TEMANIA
MEPLACE OR ADD	TO EXISTING	Sines
20MING APPROXED) n	REETING CON 5	11612
Date Granted: 5 1712 ZONING ENFORCMENT OFFICER: - This approval is subject to complianc subdivision regulations of the Borough o General Statutes, as amended. This	Fee: 75 960 Steen A Mac e (prior to occupancy) with f Naugatuck and as authorized	Variance # the provisions of the zoning and under section 8 of the Connecticut

misrepresentation or omission shall constitute a violation of the Borough regulations.

ATTACHMENT 3



WIRELESS COMMUNICATIONS FACILITY

NAUGATUCK 4 1247 NEW HAVEN ROAD NAUGATUCK, CT 06770

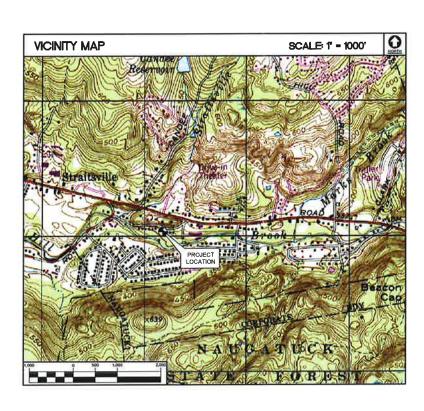
SITE DIRECTIONS 99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT HEAD NORTHEAST ON E RIVER DR TOWARD DARLIN ST TURN LEFT TO STAY ON E RIVER DR TAKE THE 1ST LEFT ONTO CONNECTICUT BLVD/US-44 W. MERCE ONTO I-94 W VIA THE RAMP ON THE LEFT TOWARD HARTFORD KEEP LEFT TO TAKE I-84 W TOAWARD WATERBURY TAKE THE AUSTIN RD EXIT, EXIT 25A TURN LEFT ONTO AUSTIN RD AUSTIN RD BECOMES SCOTT RD TURN SLEFT LEFT ONTO WATERBURY RD/CT-69 TURN RIGHT ONTO NEW HAVEN RD/CT-63

GENERAL NOTES

PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLCO PARTNERSHIP

PROJECT SCOPE

- PROPOSED CELLCO PARTNERSHIP INSTALLATION TO INCLUDE (2) SECTORS OF (3) ANTENNAS PER SECTOR FOR A TOTAL OF (6) ANTENNAS AND ASSOCIATED CABLES & APPURTENANCES MOUNTED TO TWO MAIN STEEL SUPPORT MASTS THAT WILL BE ATTACHED TO THE FACADE OF THE EXISTING BUILDING, PROPOSED CELLCO PARTNERSHIP GROUND LEASE AREA TO INCLUDE RADIO EQUIPMENT CABINETS AND A NATURAL GAS FUELED EMERGENCY POWER BACKUP GENERATOR ON A RAISED PLATFORM ENCLOSED WITH A CHAINLINK FENCE AND CANOPY ROOF.



SITE NAME:	NAUGATUCK 4
PROPERTY OWNER:	NAUGATUCK PARTNERS LLC WATERBURY, CT 08708
CELLCO PARTNERSHIP/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	ALEKSEY TYURIN CELLCO PARTNERSHIP (860) 803–8213
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 275-8345
TOWER COORDINATES:	LATITUDE: 41"-28"-01.420"N LONGITUDE: 73"-01"-11.336"W GROUND ELEVATION: ±329" A.M.S.L.
	SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A PREPARED FOR VERIZON WIRELESS BY MARTINEZ COUCH AND ASSOCIATES LLC DATED MAY 4, 2

SHEET INDEX					
SHT. NO.	DESCRIPTION	REV. NO.			
T-1	TITLE SHEET	5			
C-1	ABUTTERS MAP	5			
C-2	SITE LOCATION PLAN AND ENVIRONMENTAL NOTES	5			
C-3	PARTIAL SITE PLAN, ELEVATION, AND ANTENNA CONFIG	5			

22/1/16 JTD CAG REVISED CSC UPDATED ANTENNA, REC 2/20/16 JTD CAG REVISED CSC ADDITIONAL ANTENNA, MED 2/20/16 AWARR DAD GTC REVISED CSC ADDITIONAL ANTENNA, MED 2/20/16 AWARR DAD GSUEED FOR CSC STUDEN FOR CSC STUDEN FOR CSC STUDEN FOR CSC CSUEED FO

Partnership d/b/a Verizon

NAUGATUCK

05/02/16 SCALE: AS NOTED JOB NO. 14092.000

TITLE SHEET



ENVIRONMENTAL NOTES

WETLAND PROTECTION PLAN

PORTIONS OF THE PROPOSED PROJECT ARE LOCATED IN CLOSE PROXIMITY TO WETLANDS AND BEACON HILL BROOK. AS A RESULT, THE FOLLOWING PROTECTIVE MEASURES SHALL BE FOLLOWED TO HELP AVOID DEGRADATION OF THE NEARBY WETLAND/WATERCOURSE SYSTEM.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR THE INSTALLATION OF PROTECTIVE MEASURES AND HE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. THESE MEASURES WILL ALSO PROVIDE PROTECTION TO A NEARBY WETLAND/WATERCOURSE SYSTEM. THIS PROTECTION PROGRAM SHALL BE IMPLEMENTED REGARDLESS OF TIME OF YEAR THE CONSTRUCTION ACTIVITIES OCCUR. ALL-POINTS TECHNOLOGY CORPORATION, P.C. ("APT") WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT WETLAND PROTECTION MEASURES ARE IMPLEMENTED PROPERLY. THE CONTRACTOR SHALL CONTACT DEAN IMPLEMENTED PROPERLY. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR ENVIRONMENTAL SCIENTIST AT APT, AT LEAST 5 BUSINESS DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY TELEPHONE AT (860) 663-1697 EXT. 201 OR VIA EMAIL AT DOUSTAFSON ONLOWING TECHNOON.

THE WETLAND PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS: USE OF APPROPRIATE EROSION CONTROL MEASURES TO CONTROL AND CONTAIN EROSION WHILE AVOIDING/MINIMIZING WILDLIFE ENTANGLEMENT; PERIODIC INSPECTION AND MAINTENANCE OF ISOLATION STRUCTURES AND EROSION CONTROL MEASURES; EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; AND, REPORTING.

1. EROSION AND SEDIMENTATION CONTROLS

- G.PLASTIC NETTING USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS, REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NET LESS) OR NETTING COMPOSED OF PLANAR WOVEN NATURAL BIODEGRADABLE FIBER TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
- b.INSTALLATION OF EROSION CONTROL MEASURES SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING BARRIER INSTALLATION TO ENSURE EROSION CONTROLS ARE PROPERLY INSTALLED.
- C.IN ADDITION TO REQUIRED DAILY INSPECTION BY THE CONTRACTOR, THE FENCING WILL BE INSPECTED FOR TEARS OR BRECHES IN THE FABRIC FOLLOWING INSTALLATION PERIODICALLY BY THE ENVIRONMENTAL MONITOR THROUGHOUT THE COURSE OF THE CONSTRUCTION PROJECT, AS DEEMED NECESSARY BY THE ENVIRONMENTAL MONITOR.
- d.THE EXTENT OF THE EROSION CONTROLS WILL BE AS SHOWN ON THE SITE PLANS. THE CONTRACTOR SHALL HAVE ADDITIONAL EROSION CONTROL MATERIALS SHOULD FIELD CONDITIONS WARRANT EXTENDING THE FENCING AS DIRECTED BY THE ENVIRONMENTAL MONITOR
- e.ALL SILT FENCING AND OTHER EROSION CONTROL DEVICES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS, IF FIBER ROLLS,/WATTLES, STRAW BALES, OR OTHER NATURAL MATERIAL EROSION CONTROL PRODUCTS ARE USED, SUCH DEVICES WILL NOT BE LEFT IN PLACE TO BIODEGRADE AND SHALL BE PROMPTLY REMOVED AFTER SOILS ARE STABLE SO AS NOT TO CREATE A BARRIER TO MIGRATING WILDLIFE. SEED FROM SEEDING OF SOILS SHOULD NOT SPREAD OVER FIBER ROLLS/WATTLES AS IT MAKES THEM HARDER TO REMOVE ONCE SOILS ARE STABILIZED BY VEGETATION.

2.CONTRACTOR EDUCATIO

- G.PRIOR TO WORK ON SITE, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH THE ENVIRONMENTAL MONITOR. THIS GRIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF AN INTRODUCTORY MEETING WITH THE ENVIRONMENTAL MONITOR TO UNDERSTAND THE ENVIRONMENTALLY SENSITIVE NATURE OF THE DEVELOPMENT SITE AND THE NEED TO FOLLOW THESE PROTECTIVE MEASURES TO PREVENT UNINTENTIONAL IMPACTS TO NEARBY WETLAND/WATERCOURSE RESOURCES.
- b.THE CONTRACTOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR APT PERSONNEL TO IMMEDIATELY REPORT ANY EROSION ISSUES OR RELEASES OF SEDIMENT INTO WETLANDS OR WATERCOURSES. CAUTION POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS THROUGHOUT THE DURATION OF THE CONSTRUCTION PROJECT OF THE PROXIMITY TO SENSITIVE WETLAND AND WATERCOURSE RESOURCES.

3,PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION

- G.CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO SENSITIVE WETLANDS AND BEACON HILL BROOK.
- b.A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION STE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
- c.THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
- I. PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
- 1.REFUELING OF VEHICLES OR MACHINERY SHALL OCCUR A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES AND SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
- 2.ANY FUEL OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL
 BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY
 CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR
 WATTERCOLIRSFS

ii.INITAL SPILL RESPONSE PROCEDURES

1.STOP OPERATIONS AND SHUT OFF EQUIPMENT.

2.REMOVE ANY SOURCES OF SPARK OR FLAME.

3.CONTAIN THE SOURCE OF THE SPILL

4.DETERMINE THE APPROXIMATE VOLUME OF THE SPILL

5.IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.

6.ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.

IILSPILL CLEAN UP & CONTAINMENT

- 1.OBTAIN SPILL RESPONSE MATERIALS FROM THE ON—SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
- 2.LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
- 3.ISOLATE AND ELIMINATE THE SPILL SOURCE.
- 4.CONTACT APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
- 5.CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED

iv.REPORTING

1.COMPLETE AN INCIDENT REPORT.

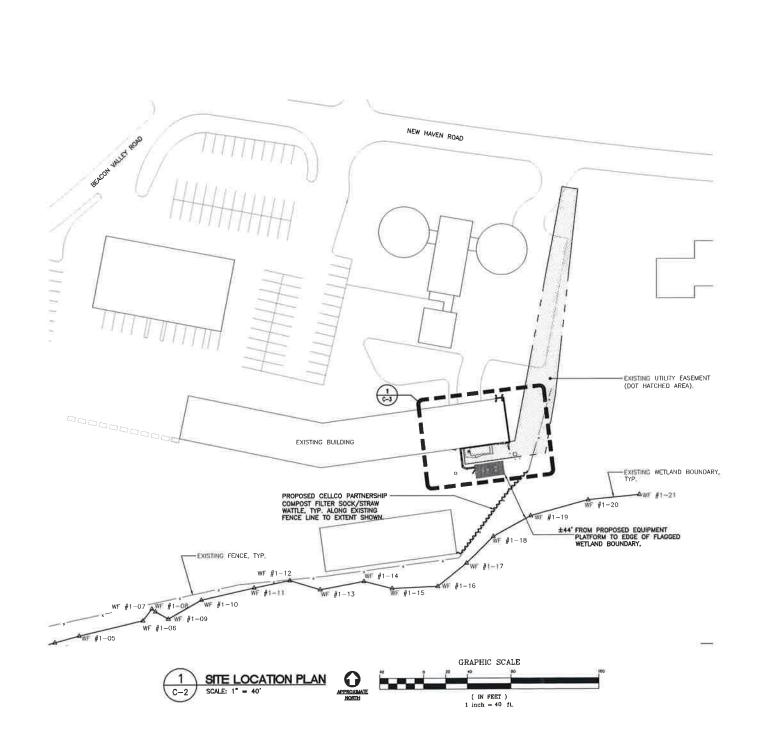
2.SUBMIT A COMPLETED INCIDENT REPORT TO APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.

HERBICIDE AND PESTICIDE RESTRICTIONS

a.THE USE OF HERBICIDES AND PESTICIDES AT THE PROPOSED WIRELESS TELECOMMUNICATIONS FACILITY IS STRICTLY PROHIBITED.

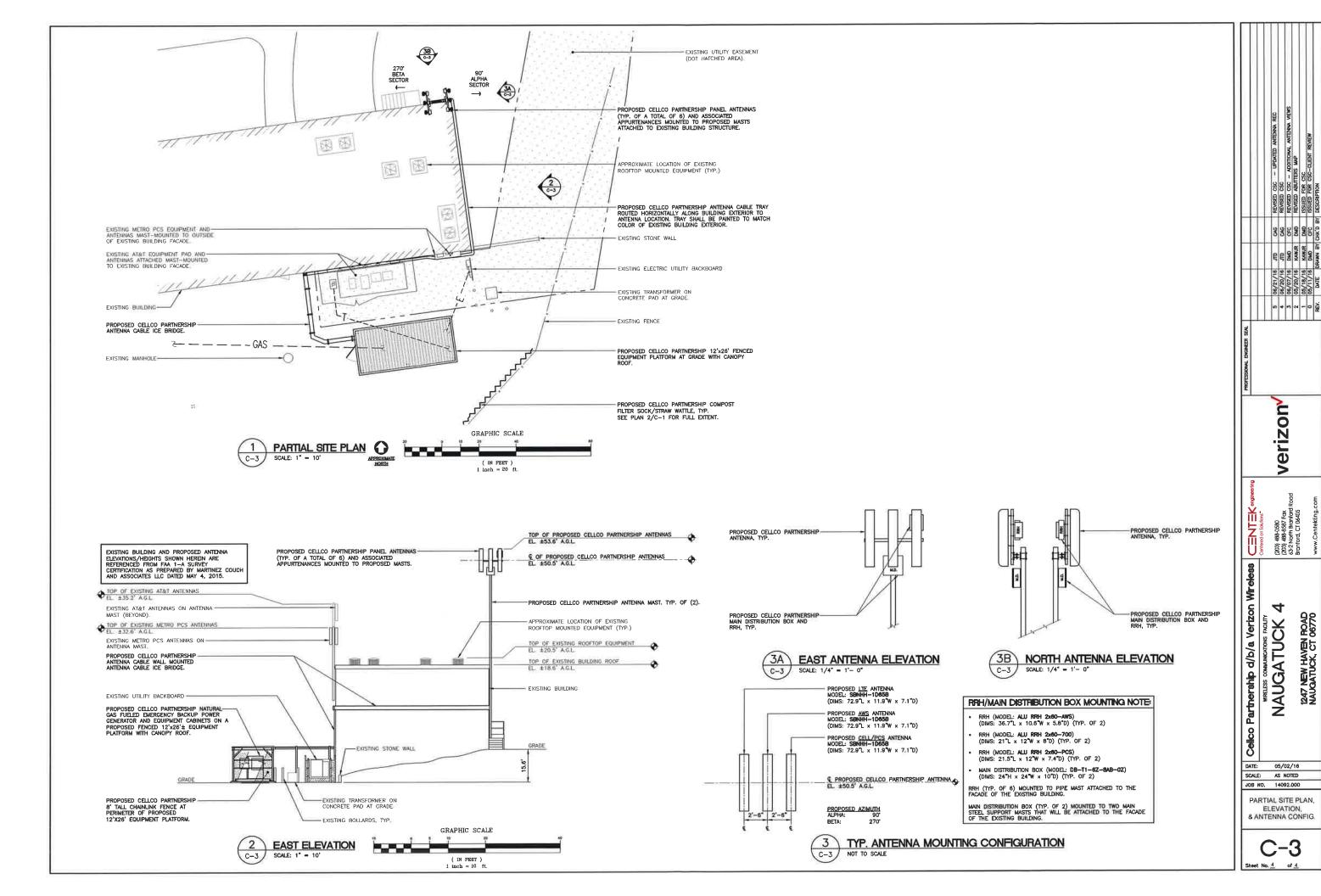
5.REPORTING

- G.DAILY INSPECTION REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) WILL BE PREPARED BY APT FOR PERIODIC INSPECTIONS AND SUBMITTED TO VERIZON WIRELESS FOR COMPLIANCE VERIFICATION. ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE CONTRACTOR AND VERIZON WIRELESS' CONSTRUCTION MANAGER AND INCLUDED IN THE REPORTS.
- b.any incidents of sediment release into the nearby wetland or watercourse will be reported to the connecticut string council
- c.FOLLOWING COMPLETION OF THE PROJECT, A SUMMARY REPORT WILL BE PREPARED BY APT DOCUMENTING COMPLIANCE WITH THIS WETLAND PROTECTION PLAN AND SUBMITTED TO VERIZON WIRELESS AND THE CONNECTICUT STING COUNCIL.



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ENVIRONMENTAL NOTES



ATTACHMENT 4

Product Specifications





SBNHH-1D65B

Andrew® Tri-band Antenna, 698-896 and $2\times1695-2360$ MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

 Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698-806	806-896	1695-1880	1850-1990	1920-2200	2300-2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0-14	0-14	0-7	0-7	0-7	0-7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
CPR at Boresight, dB	20	23	20	20	17	21
CPR at Sector, dB	14	10	12	10	9	1
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
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
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm					

Electrical Specifications, BASTA*

Frequency Band, MHz	698-806	806-896	1695-1880	1850-1990	1920-2200	2300-2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
	0 ° 14.6	0 ° 14.5	0 ° 17.4	0 ° 17.8	0 ° 18.1	0 ° 18.2
Gain by Beam Tilt, average, dBi	7° 14.6	7° 14.4	3° 17.5	3° 17.9	3° 18.3	3° 18.4
	14 ° 14.2	14 ° 13.6	7° 17.4	7° 17.9	7 ° 18.2	7° 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

^{*} CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® multiband with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Performance Note	Outdoor usage

Product Specifications



SBNHH-1D65B

Mechanical Specifications

Color Light gray
Lightning Protection dc Ground

Radiator Material Aluminum | Low loss circuit board

Radome Material Fiberglass, UV resistant

Reflector Material Aluminum

RF Connector Interface 7-16 DIN Female

RF Connector Location Bottom
RF Connector Quantity, total 6

Wind Loading, frontal 618.0 N @ 150 km/h 138.9 lbf @ 150 km/h

Wind Loading, lateral 197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear 728.0 N @ 150 km/h

Wind Loading, rear 728.0 N @ 150 km/h 163.7 lbf @ 150 km/h

Wind Speed, maximum 241 km/h | 150 mph

Dimensions

 Depth
 180.0 mm
 | 7.1 in

 Length
 1851.0 mm
 | 72.9 in

 Width
 301.0 mm
 | 11.9 in

 Net Weight, without mounting kit
 18.4 kg
 | 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage 10–30 Vdc

Internal RET High band (1) | Low band (1)

Power Consumption, idle state, maximum 2.0 W Power Consumption, normal conditions, maximum 13.0 W

Protocol 3GPP/AISG 2.0 (Multi-RET)

RET Interface 8-pin DIN Female | 8-pin DIN Male

RET Interface, quantity 1 female | 1 male

Packed Dimensions

 Depth
 299.0 mm | 11.8 in

 Length
 1970.0 mm | 77.6 in

 Width
 409.0 mm | 16.1 in

 Shipping Weight
 31.0 kg | 68.3 lb

Regulatory Compliance/Certifications

Agency

Classification

RoHS 2011/65/EU

Compliant by Exemption

China RoHS SJ/T 11364-2006

Above Maximum Concentration Value (MCV)

ISO 9001:2008

Designed, manufactured and/or distributed under this quality management system

Product Specifications



SBNHH-1D65B





Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note

Severe environmental conditions may degrade optimum performance



Alcatel-Lucent RRH2x40-07-U

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-07-U is a high-power, small form-factor Remote Radio Head (RRH) operating in the North American Digital Dividend / 700MHz frequency band (3GPP Band 13). The Alcatel-Lucent RRH2x40-07-U is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radiofrequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-07-U 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. The Alcatel-Lucent RRH2x40-07-U has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to two-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 10 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-07-U is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

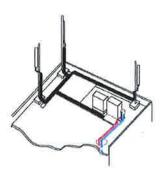
capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-07-U installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-07-U is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-07-U is compact and weights less than 23 kg (50 lb), 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 — a fraction of the time required for a traditional BTS.

Excellent RF performance

Because of its small size and weight, the Alcatel-Lucent RRH2x40-07-U can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-07-U where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-07-U provides more RF power while at the same time consuming less electricity.



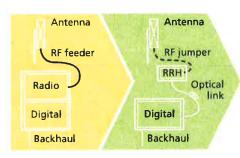
Macro

Features

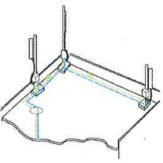
- · Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless), noise-free, and heaterless unit
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 390 mm (15.4 in.)
- Width: 380 mm (15 in.)
- Depth: 210 mm (8.2 in.)
- Weight (without mounting kit): less than 23 kg (50 lb)

Power

Power supply: -48V

Operating environment

- · Outdoor temperature range:
- ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
- Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)

- Enclosure protection
 - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 700 MHz; 3GPP Band 13
- Bandwidth: up to 10 MHz
- RF output power at antenna port:
 - ¬ 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way
- Noise figure: below 2.5 dB typical
- ALD features
 - ¬ TMA
 - ¬ Remote electrical tilt (RET) support (AISG v2.0)

Optical characteristics

Type/number of fibers

- Up to 3.12 Gb/s line bit rate
- Single-mode variant
 - ¬ One SM fiber (9/125 µm) per RRH2x, carrying UL and DL using CWDM (at 1550/1310 nm)
- Multi-mode variant
- ¬ Two MM fibers (50/125 μm) per RRH2x: one carrying UL, the other carrying DL (at 850 nm)

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Alarms and ports

- Six external alarms
- Two optical ports to support daisy-chaining

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ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET

RRH2X60-1900A-4R FOR BAND 2/25 APPLICATIONS

The Alcatel-Lucent RRH2x60-1900A-4R is a high power, small form factor Remote Radio Head operating in the PCS 1900MHz frequency band for WCDMA and LTE technologies. 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-(RF) elements. frequency modular design optimizes available and allows the main space components of a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-1900A-4R 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 RRH2x60-1900A-4R integrates all the latest technologies. This allows operators 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 multipleinput 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.

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 RRH2x60-1900A-4R 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).

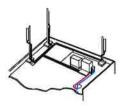
The Alcatel-Lucent RRH2x60-1900A-4R is a very cost-effective solution to deploy LTE MIMO.

EASY INSTALLATION

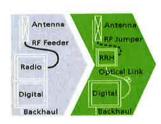
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-1900A-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-1900A-4R is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

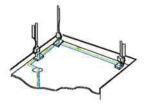
Installation can easily be done by a single person as the Alcatel–Lucent RRH2x60-190A-4R is compact and weighs about 21 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-1900A-4R integrates two power amplifiers of 60W rating (at each antenna connector)
- RRH2x60-1900A-4R can operate WCDMA only, LTE only or a mix of WCDMA and LTE
- RRH2x60-1900A-4R offers the possibility for WCDMA (non MIMO) to operate the two radio chains independently (2 blocks of 20 MHz anywhere in the band)
- RRH2x60-1900A-4R is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO deployment and/or WCDMA and LTE simultaneous operation with only one single unit per sector
- Improved uplink coverage with builtin 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: 500x285x208 mm (30l with solar shield)
- Weight: 21 kg (46 lbs) (with solar shield)

Electrical Data

- Power Supply: -48V DC (-40.5 to -57V)
- Power Consumption: 460W typ. @2x60W (100%RF)

RF Characteristics

- Supported spectrum: DL 1930-1990 / UL 1850-1910
- Frequency band: 3GPP band 2/25
- Output power: 2x60W at antenna connectors
- Technology supported: W-CDMA and LTE
- Instantaneous bandwidth: 20 MHz (MIMO) or 2x20 MHz (non MIMO)
- Rx diversity: 2-way and 4-way uplink reception

 Typical sensitivity without Rx diversity: -124.8dBm for WCDMA and -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining 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 15km using SM fiber
- TMA/RETA: AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%

- Environmental Conditions: ETS300-019-1-4 class4.1E
- Ingress Protection: IEC 60529 IP65
- Acoustic Noise: Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC: 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089
- Safety: IEC60950-1, EN 60825-1
- Regulatory: CE Mark-European Directive 2002/95/EC (RoHS), 2002/96/EC (WEEE), 1999/5/EC (R&TTE)
- Health: EN 50385

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ALCATEL-LUCENT 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 radioelements. frequency (RF) modular design optimizes available and allows the space 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 REPERFORMANCE

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.

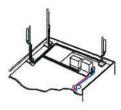
EASY INSTALLATION

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.

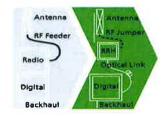
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

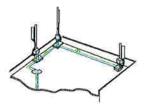
Installation can easily be done by a single person as the Alcatel–Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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 builtin 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 I 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 recention
- Typical sensitivity without Rx diversity:
 -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA: AISG 2.0 (RS485 connector and internal Bias-Tee)
- · Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

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

Safety and Regulatory Data

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

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8220-603 series Reliability through Simplicity



Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.

Intertek 4003706 **Conforms to UL STD 2200** Certified to CSA STD C22.2 No. 100

Meets EPA Emission Regulations CA/MA Emissions Compliant

Available Models:

- Natural Gas 6 kW -48 VDC
 LPG 6 kW -48 VDC
- Natural Gas 10 kW -48 VDC
 LPG 10 kW -48 VDC
- Natural Gas 12 kW -48 VDC
 LPG 12 kW -48 VDC
- Natural Gas 15 kW -48 VDC LPG 15 kW -48 VDC





2 year standard warranty, extended 5-10 year warranty available

The concepts and features behind Polar's backup generator for telecommunications include:

SMALL FOOTPRINT. Polar's DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

LOW ACOUSTIC NOISE. <59 dBA @ 7 meters, and low vibration so as not to disturb the local residents or building landlords. Quieter than other generators with lower noise ratings.

LIGHTWEIGHT. Up to 1/3 the weight of a comparable AC generator. Facilitates roof top installations.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines for increased reliability and safety.

CORROSION RESISTANT, All-aluminum enclosure with stainless hardware for low maintenace, and long service life.

SUPERCAPACITOR STARTER. Failure to start is the number one problem plaguing generator reliability. Polar's unique design has replaced the starting battery with a Super Capacitor. Capacitors are more reliable and last longer than batteries (10-15 year life).

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. Controls and wire harness are easily replaceable.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with optional SNMP.

SIMPLICITY. Transfer switch, rectifier, and starting battery are not required.



COMPARING THE COST OF AC vs DC

	AC	DC
Transfer switch required	Yes	No
Permitting costs	\$\$	\$
Shipping to site and installation cost	\$\$	\$
Site preparation/reinforcing structures	\$\$\$	\$
Ethernet/RS232 remote control and monitoring	Extra	Standard

PERMITTING IS FACILITATED

- Small engine horsepower
- DC generator is fully isolated from the utility grid
- No transfer switch
- Low acoustic noise
- Incorporates all requirements made by local Fire Marshals

8220 ALTERNATOR FEATURES

- No mechanical adjustments
- Very lightweight
- High quality electrical output
- Voltage and current regulation
- Up to 94% efficiency

- Class 220° C insulation
- Anodized type III process for aluminum parts
- Nickel plating for steel parts
- Stator is varnished

8220 ALTERNATOR SPECIFICATIONS

Туре	Permanent Magnets, NdFeB
Weight (lb/kg)	46.5/21
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	12 kW - 250 15 kW - 350
Disconnect Means	Pull fuse block, sized for each generator kW
Voltage Range (VDC)	44 to 62
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

ENCLOSURE

Model	88-25-0603	
Туре	Weather Protective	
Materials	Marine Grade Aluminum	
Door Hardware	Three Point with Padlock Hasp, and Removable Side Panels	
Mounting	Secure Mounting Tabs	

STARTER SUPERCAPACITOR SPECIFICATIONS

Model	20-16-0001
Storage Rating (Farads)	500
Voltage (VDC)	13-14.4
Weight (lb/kg)	12.1/5.5
Operating Temperature (°C/°F)	-40 to 65 / -40 to 149
Service Life (year)	10 to 15

CHARGER SPECIFICATIONS

Model	00-10-0015
Input Voltage (VDC)	28.8 to 60
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

SOUND EMISSIONS

Contact us for current sound data.

WEIGHTS AND DIMENSIONS

	Natural Gas	Propane
Dry Weight (lb/kg)	765/347	770/350
Dimensions (LxWxH) (in/cm)	32 x 50 x 72 / 8	1.3 x 127 x 183

ENGINE SPECIFICATIONS: 12 KW NATURAL GAS and LPG

Engine Model	Natural Gas - Kubota DG972 LPG - Kubota WG972
Cylinders	3 In-line
Displacement (L)	0.962
Bore (in./mm)	2.93/74.5
Stroke (in./mm)	2.9/73.6
Intake Air System	Naturally Aspirated
Engine HP	18
Emissions Compliance	EPA and CARB Certified
Variable RPM	2300 to 2600

ENVIRONMENTAL

Operating Temperature (°C/°F)	-40 to 72 or -40 to 162
Operating Humidity %	100
Cold Start Aids	Glow Plugs

PROPANE ENGINE FUEL CONSUMPTION

	Output (kW)	gal/hr	L/hr
	4	0.97	3.67
	5	1.1	4.16
	6	1.26	4.77
LPG - WG972	7	1.475	5.58
	8	1.69	6.4
	9	1.945	7.36
	10	2.2	8.33

Natural Gas Pressure Chart

Winimam	Recommented	Muximum
0.14 psi	0.39 psi	0.5 psi
4 in H2O	11 in H2O	13.9 in H2O
10 mbar	27.4 mbar	34.5 mbar

ENGINE LUBRICATION SYSTEM

Oil Filter Type	Full flow spin-on canister
Oil Capacity	3.7 L - DG972/WG972
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

ENGINE COOLING SYSTEM

Туре	Pressurized Aluminum Radiator
Water Pump	Belt-driven, Pre-lubed, self-sealing
Fan Type	Electric Fans
Airflow CFM or M³/hr	1300 or 2200
Fan Mode	Pusher
Temperature Switch	Yes

FUEL SYSTEM

Туре	Natural Gas or Propane	
Fuel Tank/Line	Supplied By Customer	
Fuel Flow Rate (BTU/hr)	211,000	



Propane / LPG Pressure Chart

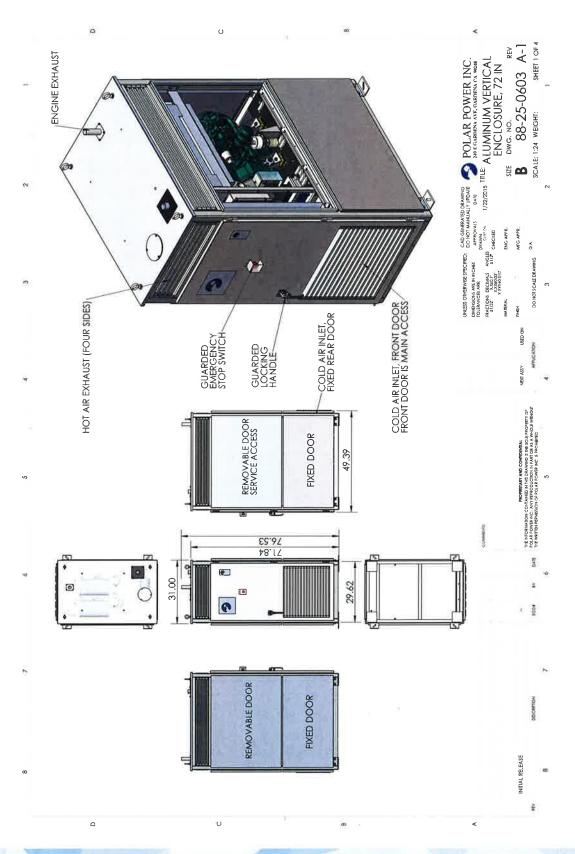
Minimum	Recommended	Waximum
10 psi	35 psi	250 psi
69 kPa	241 kPa	1.72 MPa
0.7 bar	2.4 bar	17.2 bar

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

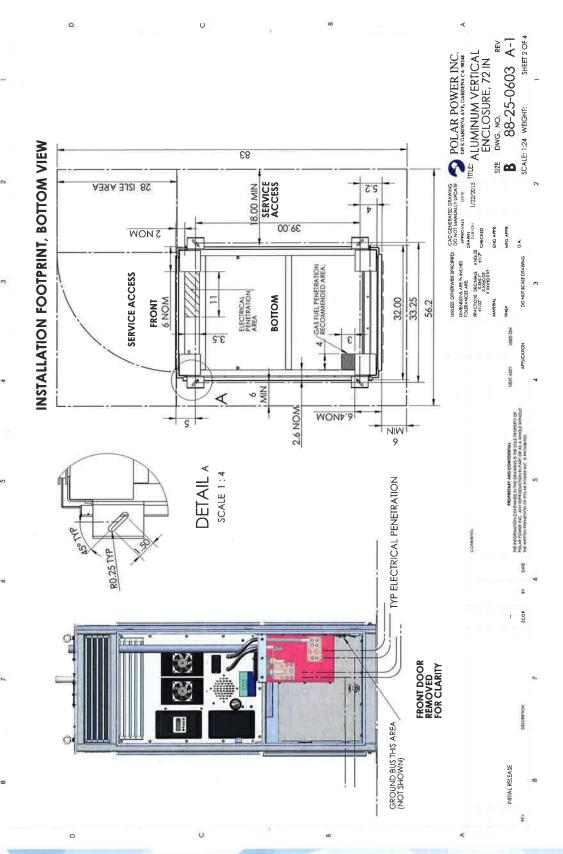
Temperature Deration	1% derate for every 5.6 °C (10 °F) above 25 °C (77 °F)	
Altitude Deration	3% derate for every 300 m (1000 ft) above 91 m (300	



6	operating clata		
ENGINE COOLING			
	Natural Gas	Propane	
System coolant capacity (gal/L)		2.2/8.3	
Maximum operation air temperature on radiator (°C/°F)		54/129	
Maximum ambient temperature (°C/°F)	49/120		
maximum ambient temperature (5, 17		13/120	
COMBUSTION REQUIREMENTS			
	Natural Gas	Propane	
Flow at rated power (cfm/cmm)		47/1.34	
riow deraced power (diffy citing)		1771.31	
EXHAUST			
	Natural Gas	Propane	
Exhaust flow at rated output (cfm/cmm)	(90/2.55	
Exhaust temperature at rated output (°C/°F)		180/900	
Exhaust temperature at rated output (C/ F)	4	80/300	
CONTROLLER FEATURES			
Controller Type		Supra Model 250	
4-Line Plain Text LCD Display	Sir	mple user interface for ease of operation	
Engine Run Hours Indication		Standard	
Programmable Start Delay		Standard	
Run/Alarm/Maintenance Logs			
Engine Start Sequence	Cyclic cranking: 5 s	sec on, 45 sec rest (3 attempts maximum)	
Starter Supercapacitor Charger			
Automatic Voltage Regulation with Over and Under Voltage Pro			
Automatic Low Oil Pressure/High Oil Temperature ShutdownStan			
Overcrank/Overspeed			
Automatic High Engine Temperature Shutdown			
Field Upgradable Firmware			
Glow Plug Delay			
Engine Start Delay Return to Utility Delay			
Engine Cooldown			
Exerciser			
		,,,,,,,	
WARNING ALARMS			
Low Diesel Fuel Level		Standard	
Diesel Fuel Tank Rapture Basin			
Low/High Supercapacitor Voltage			
High Water Temperature			
Low Oil Pressure		Standard	
CONTACT CLOSURE FOR REMOTE INDICATION (PN 84-12-0640)			
Shutdown Alarm		Optional	
Warning Alarm		Optional	
Engine Run		Optional	
Low Diesel Fuel Level		Optional	
Diesel Fuel Leak		·	
E-Stop Depressed		Optional	



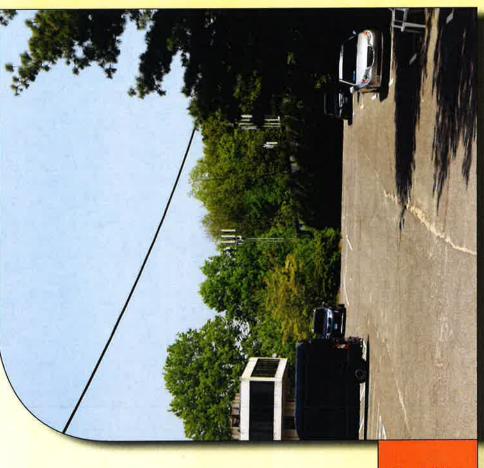




ATTACHMENT 5

Visual Assessment & Photo-Simulations

NAUGATUCK 4 1247 NEW HAVEN ROAD NAUGATUCK, CT



All-Points Technology Corporation, P.C. 3 Saddlebrook Drive Killingworth, CT 06141

Prepared for Verizon Wireless



VISUAL ASSESSMENT & PHOTO-SIMULATIONS

At the request of Cellco partnership LLC d/b/a Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed this visual assessment and prepared computer-generated photo-simulations depicting the proposed installation of a wireless telecommunications Facility at 1247 New Haven Road in Naugatuck, Connecticut (the "Property").

Project Setting

The Property is located on the south side of New Haven Road (Route 63) in a mixed commercial and residential area. The Property is currently developed with multiple commercial buildings and wireless telecommunications facilities operated by others. The proposed Facility would include the installation of six (6) antenna, three (3) each distributed over arrays mounted to two (2) new steel masts that will be attached to the southern-most structure's northeast corner. Remote radio heads would be mounted behind the antennas and a main distribution box affixed to each mast below the antennas. Each mast would rise to total heights of ±50 feet above existing grade, with the tops of the antennas reaching a total height of 53.5 feet, and about 35 feet above the roof of the building. Associated ground equipment and a natural-gas fired emergency power generator would be installed on a 12-foot by 26-foot platform located at grade off the southeast corner of the building, behind an 8-foot tall chain link fence enclosure.

Methodology

On May 25, 2016, APT personnel conducted field reconnaissance and photo-documented existing conditions. Four (4) nearby locations were selected to depict existing and proposed conditions with the new installation. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with the lens set to 50 mm to present a consistent field of view.

Three-dimensional computer models were developed for the building and proposed small cell components from AutoCAD information. Photographic simulations were then generated to portray scaled renderings of the proposed installation. Using field data, site plan information and image editing software, the proposed Facility was scaled to the correct location and height, relative to the existing structure and surrounding area. A photolog map and copies of the existing conditions and photo-simulations are attached.

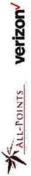
The four (4) locations simulated were chosen in the field because they presented generally unobstructed view lines towards at least a portion of the building and represent the approximate limits of visibility associated with the proposed installation. They are however static in nature and do not necessarily fairly characterize the prevailing views from all locations within a given area. The simulations provide a representation of the proposed Facility under similar settings as those encountered during the field reconnaissance. Views of the Facility can change substantially throughout the seasons as well as the time of day, and are dependent on weather and other atmospheric conditions including but not necessarily limited to haze, fog, and clouds; the location, angle and intensity of the sun; light conditions, and the specific viewer location.

Conclusions

The visibility of the proposed installation would be limited primarily to locations on the Property. Although the surrounding parcels are residentially developed, sufficient vegetation separates them from the large Property and, combined with the proposed facility's relatively low height, views do not extend to these locations.

Based on the results of this assessment, it is our opinion that the proposed installation of the Verizon Wireless communications facility will not have an adverse visual impact on existing views or the character of the community.

ATTACHMENTS





































DISTANCE TO SITE +/- 260 FEET ORIENTATION SOUTH **NEW HAVEN ROAD** LOCATION

PHOTO



















ATTACHMENT 6



WETLAND INSPECTION

January 29, 2016

APT Project No.: CT1413030

Prepared For:

Verizon Wireless 99 East River Drive East Hartford, CT 06108

Attn: Aleksey Tyurin

Verizon Wireless Site Name:

Naugatuck 4

Site Address:

1247 New Haven Road

Naugatuck, Connecticut

Date(s) of Investigation:

7/1/2014

Field Conditions:

Weather: sunny, low 80's Soil Moisture: dry to moist

Jon Moistard dry to me

Wetland/Watercourse Delineation Methodology*:

☑ Connecticut Inland Wetlands and Watercourses

☐ Connecticut Tidal Wetlands
☐ Massachusetts Wetlands
☐ U.S. Army Corps of Engineers

Municipal Upland Review Area/Buffer Zone:

Wetlands: 100 feet
Watercourses: 100 feet

The wetlands inspection was performed by :

Matthew Gustafson, Registered Soil Scientist

Marchen Lustaf

Enclosures: Wetland Delineation Field Form & Wetland Inspection Map

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

 $[^]st$ Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

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

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

Attachments

- Wetland Delineation Field Form
- Wetland Inspection Map

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1					
Flag #'s:	WF 1-01 to	1-21				
Flag Location Method:	Site Sketch		GPS	(sub-meter) located ⊠		
WETLAND HYDR	ROLOGY:					
NONTIDAL 🛛						
Intermittently Floo	ded 🗆	Artificially Flooded		Permanently Flooded		
Semipermanently I	Flooded \square	Seasonally Flooded ⊠		Temporarily Flooded □		
Permanently Satura	ated □	Seasonally Saturated – seepag	ge □	Seasonally Saturated - perched		
Comments: None						
ΓIDAL □		Ŕ				
Subtidal		Regularly Flooded □		Irregularly Flooded □		
Irregularly Flooded		5 7				
Comments: None				=		
WETLAND TYPE	:					
SYSTEM:		ъ П	- 1,	D 1 4 * 57		
Estuarine		Riverine		Palustrine 🛛		
Lacustrine		Marine □				
Comments: None						
CLASS:						
Emergent		Scrub-shrub □		Forested ⊠		
Open Water		Disturbed ⊠	1	Wet Meadow □		
Comments: None			- 1			
WATERCOURSE	TYPE:					
Perennial ⊠		Intermittent	7	Γidal □		
Watercourse Name	: Beacon Hi	ll Brook				
				h stone armored banks. Bank erosion he watershed and resulting flashy		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

of Echile Agentine milbrining	T	
Vernal Pool Yes □ No ☒ Potential □	Other	
Vernal Pool Habitat Type: None		
Comments: None		
SOILS:		
Are field identified soils consistent with NRCS mapped soils?	Yes ⊠	No □
If no describe field identified soils		

DOMINANT PLANTS:

Multiflora Rose* (Rosa multiflora)	Japanese Knotweed* (Polygonum cuspidatum)
Red Maple (Acer rubrum)	Autumn Olive* (Elaeagnus umbellate)
Jewelweed (Impatiens capensis)	Winged Euonymus* (Euonymus alata)
Silver Maple (Acer saccharinium)	Spicebush (Lindera benzoin)
American Beech (Fagus grandifolia)	Witchhazel (Hamamelis virginiana)
Japanese Barberry* (Berberis thunbergii)	Japanese Stiltgrass* (Microstegium vimineum)
Sycamore (Platanus occidentalis)	

^{*} denotes Connecticut Invasive Species Council invasive plant species

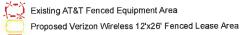
GENERAL COMMENTS:

The proposed Verizon Wireless 12-foot by 26-foot fenced lease area is located in a paved area adjacent to an industrial warehouse building and an existing AT&T equipment compound. Verizon Wireless' proposed development activities are located ±44 feet north of Wetland 1 (Beacon Hill Brook) at the nearest point (wetland flag 1-19). Due to the existing developed nature of the proposed Verizon Wireless fenced lease area and since the existing industrial development encroaches closer to wetlands than the proposed Verizon Wireless activity, no likely adverse impact to wetlands from the proposed Verizon Wireless development is anticipated. This determination is contingent upon erosion and sedimentation controls being installed and maintained during construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control to avoid sediment discharges to nearby Beacon Hill Brook.

Due to the proximity of Beacon Hill Brook to the proposed development and to ensure that erosion controls are properly installed, APT recommends that a qualified professional provide environmental compliance awareness training to the Contractor and independently inspect erosion controls to document proper installation.



Legend



Approximate Site Boundary

Approximate Parcel Boundary

- Culvert
- ▲ Wetland Flag

Delineated Wetland Boundary

Wetland Area

Wetland Inspection Map

Proposed Wireless Telecommunications Facility Naugatuck 4 1247 New Haven Road Naugatuck, Connecticut

verizon/



ATTACHMENT 7

Far Field Approximation with downtilt variation

Estimated Radiated Emission Single Emitter Far Field Model

5	Types
	Antenna
5	Yagi
1915	/Wire
)ipole

Verizonwireless

0.09

	Assumes level ground, normal to antenna mounting structure ——% Occupational ——% General Public ——Power Density	90.0 80.0 70.0 65.0 60.0 55.0 50.0 45.0 40.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 30
--	--	---

Calc Angle	0.06	80.0	70.0	65.0	0.09	55.0	20.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0
Solve for r, dx to antenna	47.5	48.2	50.6	52.4	54.9	58.0	62.0	67.2	73.9	82.9	95.0	112.4	138.9	183,6	273,7	545.3	681.3	1361.7
Distance from Antenna Structure Base in Horizontal plane	0'0	8,4	17.3	22.2	27.5	33.3	39.9	47.5	26.6	679	82.3	101.9	130.6	177.4	269.5	543.2	9.629	1360,9
Angle from Main Beam (reference to horizontal plane)	06	08	02	65	99	55	50	45	40	35	30	25	20	15	10	Ŋ	4	7
dB down from centerline (referenced to centerline)	36,76	34,35	38.52	35.34	29.54	26.8	25,59	25,63	25.99	21,21	20,29	23,24	13.03	12,3	9.92	2	0.2	٥
Reflection Coefficient (1 to 4, 2.56 typical)	2,56	2.56	2.56	2.56	2.56	2.56	2,56	2,56	2.56	2.56	2,56	2,56	2,56	2.56	2.56	2.56	2.56	2.56
Power Density (mW/cm^2)	00'0	0.01	00:00	00'0	0.01	0.02	0,03	0.02	0.02	0.04	0.04	10'0	60'0	90'0	0.05	0.07	0.07	0.02
Percent of Occupational Standard	0.1	0.1	0'0	0.1	0.3	0,4	0.5	0.4	0.3	8.0	0.7	0,3	1.8	1.2	1.0	1.5	1.4	0.4
Percent of General Population Standard	6,0	9'0	0.2	0,4	1,3	2,2	2.5	2.1	1.6	3.9	3,6	113	9.0	6.1	4.8	7.4	7.2	1.9

Antenna Type: SBNHM-1D65B

Max%: 9.05%

Far Field Approximation with downtilt variation

Estimated Radiated Emission Single Emitter Far Field Model

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Ω.
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ipole/Wire/Yag

Far Field Approximation	Reference to Main Beam Centerline				eisis or						0.0 8.4 17.3 22.2 27.5 33.3 39.9 47.5 56.6 67.9 82.3 101.9 130.6 177.4 269.5 543.2 679.6 1360.0	Distance from Towner Base in the Vertical Planter (feet) Accurace lasted normal normal to antenne monunities characters	Assumes rever undured. Inclinate to amenina invariant of a concerned —— % General Public —— Power Density
NAUGATUCK 4 CT	2-0085	05/03/16	Jaime Laredo	NAUGATUCK 4 CT - FF POWER (PCS) xlsx	1970.0	50.5	18.4	72.0	0.0	0.0	2333.0	1	
Location:	Site #:	Date:	Name:	File Name:	Operating Freq. (MHz):	Antenna Height (ft):	Antenna Gain (dBi):	Antenna Size (in.):	Downtilt (degrees):	Feedline Loss (dB):	ERP (W):	No. of Channels:	

Power Density mW/cm^2

000

90.0

0.03

Verizonwireless

Solve for r, dx to antenna 47,5 48.2 50.6 52.4 Distance from Antenna Structure Base in Horizontal plane Angle from Main Beam (reference to horizontal plane) 90 8.4 17.3 22.2 Angle from Centerline (referenced to centerline) 90 70 65	2 27.5	33.3	62.0								10.0	2.0	4.0	7.0
0.0 8.4 17.3 22.2 90 80 70 65 36.76 34.35 38.52 35.34		33,3	000	67.2	73,9	82.9	95.0	112.4	138.9	183.6	273.7	545.3	681.3	1361,7
90 80 70 65 36.76 34.35 38.52 35.34	Н		39.9	47.5	56.6	6'29	82,3	101.9	130.6	177.4	269.5	543.2	9'629	1360.9
36.76 34.35 38.52 35,34		55	20	45	40	35	30	25	20	15	10	r.	4	2
	14 29.54	26.8	25,59	25,63	25,99	21,21	50,29	23.24	13,03	12,3	9,92	2	0.2	0
Reflection Coefficient (1 to 4, 2.56 typical) 2.56 2.56 2.56 2.56	6 2.56	2.56	2.56	2,56	2.56	2,56	2.56	2,56	2.56	2,56	2.56	2.56	2,56	2,56
Power Density (mW/cm^2) 0.00 0.00 0.00 0.00	0 0.01	0.02	0.03	20.0	0,02	0,04	0.04	0.01	60'0	90.0	0.05	0.07	0,07	0.02
Percent of Occupational Standard 0.1 0.1 0.0 0.1	1 0.3	0.4	0.5	0.4	6,0	8.0	2,0	0.3	1,8	1,2	1,0	1,5	1,4	0.4
Percent of General Population Standard 0.2 0.4	1.3	2,2	2,5	2,1	1,6	3.9	3.6	1.3	9.0	6,1	4.8	7.4	7.2	1,9

Antenna Type: SBNHH-1D65B

Max%: 9.05%

Estimated Radiated Emission Single Emitter Far Field Model Dipole/Wire/Yagi Antenna Types

Verizonwireless

											8.4 17.3 22.2 27		
			35	brist 0	C Stano	of FO	ineone ro	P.G	0.5		0.0		
NAUGATUCK 4 CT	2-0085	05/03/16	Jaime Laredo	NAUGATUCK 4 CT - FF POWER (LTE-700).xlsx	746.0	50.5	14.7	72.0	0.0	0.0	1019.3	1	
Location:	Site #:	Date:	Name:	File Name:	Operating Freq. (MHz):	Antenna Height (ft):	Antenna Gain (dBi):	Antenna Size (in.):	Downtilt (degrees):	Feedline Loss (dB):	ERP (W):	No. of Channels:	

Far Field Approximation Reference to Main Beam Centerline - 0.02	2/mo/l	Mm (filane)	Doword I		0000	8.4 17.3 22.2 27.5 38.3 39.9 47.5 56.6 67.9 82.3 101.9 130.6 177.4 269.5 543.2 679.6 1360.5 Distance from Tower Base in the Vertical Plane (feet) Assumes level ground, normal to antenna mountling structure —— "Socupational —— "S General Public —— Power Density
40	bnabna 8 2 0 7 0 7	1 of FCC St		10		

Calc Angle	0'06	80.0	70.0	65.0	0.09	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	2.0	4.0	2.0
Solve for r, dx to antenna	47.5	48.2	9'05	52,4	54.9	58,0	62.0	67.2	73.9	82.9	95.0	112.4	138.9	183.6	273.7	545,3	681.3	1361.7
Distance from Antenna Structure Base in Horizontal plane	0.0	8.4	17,3	22.2	27.5	33.3	39.9	47.5	56.6	67.9	82.3	101.9	130.6	177.4	269.5	543.2	9.629	1360.9
Angle from Main Beam (reference to horizontal plane)	06	80	70	65	9	55	20	45	40	35	30	25	20	21	10	S	4	2
dB down from centerline (referenced to centerline)	36,76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20,29	23.24	13,03	12,3	26'6	2	0.2	٥
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2,56	2.56	2,56	2,56	2.56	2.56	2.56	2,56	2.56	2.56	2.56	2,56	2.56	2,56
Power Density (mW/cm^2)	00'0	00'0	00'0	00'0	00.0	00.0	00'0	00'0	00.0	0.01	0.01	00.0	0,02	0,01	0,01	0,01	0.01	00'0
Percent of Occupational Standard	0.0	0'0	0'0	0'0	0.1	0.2	0.2	0.2	0,1	0,3	0,3	0.1	0,7	0,5	0,4	9'0	0.5	0,1
Percent of General Population Standard	0.1	0.2	0.1	0.1	0.5	8'0	6'0	8.0	9'0	23	1.4	0.5	3.4	2.3	1.8	2,8	2.7	2'0

Antenna Type: SBNHH-1D65B

Max%: 3.41%

ATTACHMENT 8

* Federal Airways & Airspace

* Summary Report: New Construction

Antenna Structure

Airspace User: Not Identified

File: NAUGATUCK_4_CT

Location: Naugatuck, CT

Latitude: 41°-28'-1.420" Longitude:

73°-1'-11.34"

SITE ELEVATION AMSL.....6 ft. STRUCTURE HEIGHT......54 ft. OVERALL HEIGHT AMSL.....60 ft.

NOTICE CRITERIA

FAR 77.9(a): NNR (DNE 200 ft AGL)

FAR 77.9(b): NNR (DNE Notice Slope)

FAR 77.9(c): NNR (Not a Traverse Way)

FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for OXC

FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for MMK

FAR 77.9(d): NNR (Off Airport Construction)

NR = Notice Required

NNR = Notice Not Required

PNR = Possible Notice Required (depends upon actual IFR procedure)

For new construction review Air Navigation Facilities at

bottom

of this report.

Notice to the FAA is not required at the analyzed location and height for

slope, height or Straight-In procedures. Please review the 'Air Navigation'

section for notice requirements for offset IFR procedures and EMI.

OBSTRUCTION STANDARDS

FAR 77.17(a)(1): DNE 499 ft AGL

FAR 77.17(a)(2): DNE - Airport Surface

FAR 77.19(a): DNE - Horizontal Surface

FAR 77.19(b): DNE - Conical Surface

FAR 77.19(c): DNE - Primary Surface

FAR 77.19(d): DNE - Approach Surface

FAR 77.19(e): DNE - Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: OXC: WATERBURY-OXFORD

Type: A RD: 31179.39 RE: 679.2

FAR 77.17(a)(1): DNE

DNE - Height No Greater Than 200 feet AGL. FAR 77.17(a)(2):

VFR Horizontal Surface: DNE VFR Conical Surface: DNE VFR Approach Slope: DNE

VFR Transitional Slope: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: MMK: MERIDEN MARKHAM MUNI

RD: 54279.21 RE: 103 Type: A FAR 77.17(a)(1): DNE FAR 77.17(a)(2): Does Not Apply.

VFR Horizontal Surface: DNE DNE VFR Conical Surface: VFR Approach Slope: DNE VFR Transitional Slope: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)

DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4) MOCA Altitude Enroute Criteria The Maximum Height Permitted is 1100 ft AMSL

PRIVATE LANDING FACILITIES

BEARING RANGE DELTA FACIL

ARP FAA

IDENT TYP NAME TO FACIL IN NM

ELEVATION IFR

342.41 2.6 5CT1 HEL RONDO

-470

No Impact to Private Landing Facility

Structure 0 ft below heliport.

351.35 5.13 1CT3 HEL ST MARY'S

-240

No Impact to Private Landing Facility Structure 0 ft below heliport.

AIR NAVIGATION ELECTRONIC FACILITIES

DIST DELTA FAC st

GRND APCH

TYPE AT FREQ VECTOR (ft) ELEVA ST LOCATION IDNT

ANGLE BEAR

I 36 219.44 39977 -511 CT CLERA JWE NDB

73									
	HVN	VOR/DME	R	109.8	153.69	83260	+54	CT	NEW HAVEN
.04	MAD	VOR/DME	R	110.4	121.95	105833	-160	СТ	MADISON
09	BDR	VOR/DME	R	108.8	194.41	115281	+51	CT	BRIDGEPORT
. 03	HFD	VOR/DME	R	114.9	63.72	144014	-789	СТ	HARTFORD
31	CMK	VOR/DME	I			168502			
22		,							
35	PWL	VOR/DME	Ι	114.3					PAWLING
05	BDL	RADAR	ON		28.09	194947	-176	CT	BRADLEY INTL
	BDL	VORTAC	D	109.0	27.54	194955	-100	CT	BRADLEY
03	CCC	VOR/DME	R	117.2	162.82	205049	-25	NY	CALVERTON
01	OKX	RADAR WXL	Y		168.97	223336	-161	NY	BRENTWOOD
04	OVH	RADAR ARSR	Y	1326.9	156.98	233108	-291	NY	RIVERHEAD
07	HPN	RADAR	ON	2735.	232.85	239172	-450	NY	WESTCHESTER
COUNT		11	011						
MacAR	ISP 	RADAR 03	ON	2735.	184.93	241588	-122	NY	LONG ISLAND

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.

Movement Method Proof as specified in §73.151(c) is not required. Please review 'AM Station Report' for details.

Nearest AM Station: WFNW @ 5630 meters.

Airspace® Summary Version 16.3.410

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05-03-2016 11:27:19

ATTACHMENT 9

Robinson + Cole

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

June 29, 2016

Via Certificate of Mailing

N. Warren Hess III, Mayor Town of Naugatuck 229 Church Street Naugatuck, CT 06770

Re: Proposed Installation of a Wireless Telecommunications Facility at 1247 New Haven Road, Naugatuck, Connecticut

Dear Mayor Hess:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to install a new telecommunications facility at 1247 New Haven Road in Naugatuck (the "Property"). The facility will consist of a tower mast, attached to the existing warehouse building, supporting six (6) antennas and four (4) remote radio heads (RRHs). The top of Cellco's antennas will extend to a height of 53'-6" above grade, approximately 35' above the roof of the building. Equipment associated with the facility and a back-up generator will be located on an 12' x 26' platform and canopy structure along the south side of the building, adjacent to the existing AT&T equipment.

A full copy of the Petition is attached for your review. In accordance with Council requirements, abutting landowners were also sent notice of this filing and a copy of the Petition.

14761350-v1

Robinson+Cole

N. Warren Hess III June 29, 2016 Page 2

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

Sincerely,

Kenneth C. Baldwin

Attachment

Robinson Cole

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

June 29, 2016

Via Certificate of Mailing

Naugatuck Partners LLC 109 Nichols Drive Waterbury, CT 06708

Re: Proposed Installation of a Wireless Telecommunications Facility at 1247 New Haven Road, Naugatuck, Connecticut

Dear Sir or Madam:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to install a new telecommunications facility at 1247 New Haven Road in Naugatuck (the "Property"). The facility will consist of a tower mast, attached to the existing warehouse building, supporting six (6) antennas and four (4) remote radio heads (RRHs). The top of Cellco's antennas will extend to a height of 53'-6" above grade, approximately 35' above the roof of the building. Equipment associated with the facility and a back-up generator will be located on an 12' x 26' platform and canopy structure along the south side of the building, adjacent to the existing AT&T equipment.

A full copy of the Petition is attached for your review. In accordance with Council requirements, abutting landowners were also sent notice of this filing and a copy of the Petition.

14761366-v1

Robinson + Cole

Naugatuck Partners LLC June 29, 2016 Page 2

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

Sincerely,

Kenneth C. Baldwin

Attachment

ATTACHMENT 10

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

June 29, 2016

Via Certificate of Mailing

«Name and Address»

Re: Notice of Intent to File a Petition for Declaratory Ruling with the Connecticut Siting Council for the Installation of a Wireless Telecommunications Facility at 1247 New Haven Road, Naugatuck, Connecticut

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to install a new telecommunications facility at 1247 New Haven Road in Naugatuck (the "Property"). The facility will consist of a tower mast, attached to the existing warehouse building, supporting six (6) antennas and four (4) remote radio heads (RRHs). The top of Cellco's antennas will extend to a height of 53'-6" above grade, approximately 35' above the roof of the building. Equipment associated with the facility and a back-up generator will be located on an 12' x 26' platform and canopy structure along the south side of the building, adjacent to the existing AT&T equipment. A copy of Cellco's Petition is attached for your review.

This notice is being sent to you because you are listed on the Town Assessor's records as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council's process for reviewing the Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

June 29, 2016 Page 2

Sincerely,

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTING PROPERTY OWNERS

1247 NEW HAVEN ROAD NAUGATUCK, CONNECTICUT

	Property Address	Owner's and Mailing Address
1,	1257 New Haven Road	Affordable & Safe Self Storage LLC 137 South Main Street Newtown, CT 06470
2.	39 Hackett Street	Thelma D. Nelson Walter Paul Nelson, Sr. Est. 39 Hackett Street Naugatuck, CT 06770
3.	53 Hackett Street	Dona J. and Robert W. Lucuk, Jr. 53 Hackett Street Naugatuck, CT 06770
4.	63 Hackett Street	Sharon Heady and Jason Labansky 63 Hackett Street Naugatuck, CT 06770
5.	73 Hackett Street	Douglas J. and Nancy A. Mariano 73 Hackett Street Naugatuck, CT 06770
6.	79 Hackett Street	Arnold Barabanov 79 Hackett Street Naugatuck, CT 06770
7.	893 Beacon Valley Road	Kevin G. and Darlene M. Gilleo 1277 New Haven Road Naugatuck, CT 06770
8.	1207 New Haven Road	Maria and Arthur James 1207 New Haven Road Naugatuck, CT 06770
9.	1217 New Haven Road	Sarah and William F. Burke, Jr. 1217 New Haven Road Naugatuck, CT 06770

	Property Address	Owner's and Mailing Address
10.	1221 New Haven Road	Naugatuck Partners LLC 109 Nichols Drive Waterbury, CT 06708
11.	1232 New Haven Road	One Thousand Two Hundred Twenty Four New Haven Road LLC 30D Progressive Avenue Seymour, CT 06483
12.	1236 New Haven Road	Hayes Aggregates Naugatuck LLC 30C Progressive Avenue Seymour, CT 06483
13.	1240 New Haven Road	Margaret E. Taggett 1240 New Haven Road Naugatuck, CT 06770
14.	1246 New Haven Road	Rachel Fabrisi 1246 New Haven Road Naugatuck, CT 06770
15.	1250 New Haven Road	Rosalie V. Moore 151 Andrew Avenue, Apt. 113 Naugatuck, CT 06770