



APPLICATION FOR PERSONAL WIRELESS SERVICE FACILITY
SPECIAL PERMIT

Applicant: New Cingular Wireless PCS, LLC ("AT&T")
AT&T Site Id: MA1433S
Property Address: 2 Warr Avenue, Wareham MA
Property Owner: Zecco Marine, LLC

1. Project Narrative
2. Application Form
3. Letter of Authorization
4. AT&T FCC Licenses
5. RF Coverage Maps & Affidavit
6. Site Acquisition Agent Affidavit
7. Equipment Specification Sheets
8. Viewshed Analysis
9. Copy of Deed
10. Abutters List
11. MPE Study
12. Structural Letter
13. Site Plan

Prepared by: Michael Johnson
Tower Resource Management
16 Chestnut Street, Suite 220
Foxborough, MA 02035
(781) 561-5538
(774) 215-5423
mjohnson@trmcom.com

SECTION 1

December 4, 2013

HAND DELIVERED

Town of Wareham
Zoning Board of Appeals
Memorial Town Hall
54 Marion Road
Wareham, MA 02571

RE: Wireless Telecommunications Facility

Applicant: New Cingular Wireless PCS, LLC by and through its Manager, AT&T Mobility Corporation ("AT&T" or "Applicant")

Site: 2 Warr Avenue, Wareham, MA (Assessor's Map 46, Lot 1002) (the "Site")

Owner: Zecco Marine, LLC

Facility: Construct a 100' (above ground level, hereafter "AGL") monopole-style tower (the "Monopole"), install twelve (12) panel antennas (four (4) panel antennas per sector) at the 96' AGL centerline mark, together with related amplifiers, cables, fiber and other associated antenna equipment including remote radio heads, surge arrestors, coax cables, cable trays, global positioning system antennas with associated electronic equipment, emergency backup power generator and other appurtenances in AT&T's proposed equipment shelter located within a compound enclosed by a chain link fence, as well as an access drive (the "Facility").

Relief Requested: A special permit for a Wireless Telecommunications Facility pursuant to: Article 3, Section 321 and Article 5, Section 540 and Article 14, Section 1450 of the Zoning Bylaw of the Town of Wareham (hereinafter the "Bylaw"), Massachusetts General Laws Ch. 40A, and the Telecommunications Act of 1996 (the "TCA"), and such other relief as deemed necessary.

Dear Honorable Members of the Zoning Board of Appeals:

On behalf of AT&T, we are pleased to submit this memorandum to the Town of Wareham Zoning Board of Appeals (the "Board") in support of AT&T's special permit application (the "Application"), and such other relief deemed necessary for the installation, operation and maintenance of the Facility on the Building located at the Site. The following provides background information regarding the Facility and addresses each applicable section of the Bylaw.



BACKGROUND

AT&T proposes to construct a 100' AGL Monopole, install twelve (12) panel antennas (four (4) panel antennas per sector) at the 96' centerline mark, extending to 100' AGL, together with related amplifiers, cables, fiber and other associated antenna equipment including remote radio heads, surge arrestors, cable trays, global positioning system antennas with associated electronic equipment in AT&T's proposed equipment shelter and an emergency backup power generator located within a compound enclosed by a chain link fence. The Facility is shown in detail on the plans (the "Plans") attached hereto and submitted with this Application.

The Site is located within the Marine MAR zoning district. Pursuant to Article 3, Section 321 of the Bylaw, a wireless telecommunications facility at the Site is allowed by special permit issued by the Board. According to Article 6, Section 624, the maximum height on the MAR zoning district is 45'. However, Section 544.1 allows new towers and antennas to extend to a total height of 190'. Pursuant to Article 3, Section 321 and Article 14, Section 1411.2 of the Bylaw, the Board is vested with the authority to grant the relief herein requested. Also, to the extent necessary, all rights reserved, AT&T requests any other relief deemed necessary pursuant to the Bylaw, Massachusetts General Laws Ch. 40A and the TCA.

The Applicant leases a portion of the Site from the owner of the Site. AT&T operates a nationwide wireless communications system that offers enhanced features such as caller ID, voice mail, e-mail, and superior call clarity. AT&T is in the process of building out a national network as required by AT&T's license issued by the Federal Communications Commission (the "FCC"). By filling a significant coverage gap, the Facility will aid in reaching AT&T's goal of providing adequate and reliable wireless communications services in and around Wareham and to all of Massachusetts. Additionally, AT&T is enhancing its data network to provide high speed data services commonly referred to as "long term evolution" ("LTE"). Currently, LTE is designed to improve AT&T's data services network. LTE will be incorporated into this Facility.

A reliable communications system depends on a grid of antennae arranged in a geographical pattern, similar to a honeycomb. Each "site" is created by an antenna and serves as a link between the customer and the telephone system, while that caller is within proximity to the site. Each site can handle a finite number of connections. As the number of customers increase, more sites must be added to handle the increased volume. If this is not accomplished, connections are dropped or customers' calls are blocked and they will get a busy signal. A new antenna installation must be constructed each time a new site is created.

AT&T submits that the Site is well suited for a wireless communications facility and that the Site satisfies the intent and purposes of the Bylaw to the extent possible. As will be demonstrated through the Application materials and the written and oral evidence at the public hearing(s) in connection with the Application, the proposed Facility meets with all applicable requirements of the Bylaw to the extent possible. The Facility will not adversely impact adjacent properties and neighborhoods as the Facility is screened from view to the maximum extent



possible. The location of the Facility will protect, to the extent practicable, the aesthetic qualities of the Town of Wareham by utilizing a parcel of land that is especially suited to the proposed use and will minimize impacts to the interests protected by the Bylaw. The Facility will not be a threat to public health, safety and welfare. In fact, Applicant submits that the proposed Facility will aid in public safety by providing and improving wireless communications services to the residents, businesses, commuters, and emergency personnel utilizing wireless communications in the immediate vicinity and along the nearby roads.

Consistent with the Bylaw, the Facility will function as a wireless communications services facility within a local, regional, and national communications system. This system operates under license from the FCC and AT&T is mandated and authorized to provide adequate service to the general public. This Site was selected after a careful screening process and was found useful to AT&T. The Facility will not generate any objectionable noise, odor, fumes, glare, smoke, or dust or require additional lighting or signage. The Facility will have no negative impact on property values in the area. No significant increase in traffic or hindrance to pedestrian movements will result from the Facility. On average, only one or two round trip visits per month are required to service and maintain the Facility. This is an unmanned Facility and will have minimal negative effect on the adjoining lots. The Facility does not require police or fire protection because the installation has its own monitoring equipment that can detect malfunction and/or tampering.

RELIEF REQUESTED

AT&T respectfully requests that the Board grant a special permit for a Wireless Telecommunications Facility pursuant to: Article 3, Section 321 and Article 5, Section 540 and Article 14, Section 1450 of the Bylaw; and to the extent necessary, all rights reserved, any other relief deemed necessary, pursuant to the Bylaw, Massachusetts General Laws Ch. 40A, and the TCA, and such other relief as deemed necessary for the installation, operation and maintenance of the Facility as provided in the Plans submitted with the Application, all rights reserved.

ARTICLE 5, SECTION 540– WIRELESS COMMUNICATIONS FACILITIES

541 PURPOSE

It is the purpose of this Section to minimize the adverse impacts of communication structures, towers, and facilities by establishing requirements, guidelines, standards for review, and procedures to permit their installation in the Town of Wareham.

Consistent with the intent and purpose of the Bylaw, the proposed Facility will be located upon a large parcel of land, partially screened by existing buildings so that potential visual impacts are minimized and the aesthetic qualities of the Town of Wareham are preserved. The Facility will not be contrary to the public interest and welfare. The Facility will benefit those living and working in, and traveling through the area by providing enhanced wireless telecommunication services. In fact, AT&T submits that the proposed Facility will aid in



public safety by providing and improving wireless communications services to the residents, businesses, commuters, and emergency personnel utilizing wireless communications in the immediate vicinity and along the nearby roads. The Facility will not generate any objectionable noise, odor, fumes, glare, smoke, or dust or require additional commercial signage. The Facility will have no negative impact on property values in the area. No significant increase in traffic or hindrance to pedestrian movements will result from the Facility. On average, only one or two round trip visits per month are required to service and maintain the Facility. The Facility is unmanned and will have no negative effect on the adjoining lots. This Facility does not require police or fire protection because the installation has its own monitoring equipment that can detect malfunction and/or tampering.

542 APPLICABILITY

542.1 No wireless communications facility or structure shall be erected or installed except in compliance with the provisions of this Section.

AT&T submits this Application in compliance with the terms of this provision of the Bylaw.

542.2 Any proposed extension in the height or construction of a new or replacement facility, or additional appurtenances, shall be subject to a new application.

AT&T acknowledges the terms of this provision of the Bylaw.

543 GENERAL REQUIREMENTS

543.1 Only freestanding structures are allowed. Structures requiring guy wires for support are prohibited.

AT&T's proposed Monopole will be freestanding and will not require any guy wires.

543.2 All towers shall be set back a distance at least equal to the height of the tower from all property lines. Antennas or structures to be used exclusively by a federally licensed amateur radio operator may be closer than the above-described 300 feet, but must be located so as to minimize harm to any nearby structures.

AT&T's Monopole will be located 187' from the nearest property line.

543.3 Abandoned structures shall be removed within one (1) year of cessation or use. The applicant shall post a performance bond of an amount, which the Board of Appeals deems to be sufficient for removal of the structure. If not removed within one year, the Town shall have the right to remove the structure at the owner's expense.



AT&T will comply with the terms of this provision of the Bylaw and will work with the Board to establish a mutually acceptable amount.

- 543.4 Applicant for a tower shall post an insurance certificate naming the Town as additional insured -minimum of \$1,000,000 - for general liability insurance for any lawsuit either for damage, interference, or health-related claims. Proof shall be furnished to the Town Clerk, including a stipulation claims. Proof shall be furnished to the Town Clerk, including a stipulation that if the policy is canceled due to nonpayment, the Town will be notified. Any cancellation shall constitute a violation of the Special Permit.**

If the Board renders a favorable decision, AT&T will comply with the terms of this provision of the Bylaw.

544 DESIGN GUIDELINES

- 544.1 Towers and attached accessory antennas shall not exceed one hundred ninety (190) feet in height as measured from ground level at the base of the pole.**

AT&T proposes a 100' Monopole in compliance with the terms of this provision of the Bylaw.

- 544.2 The height of a satellite dish located on a building or in the yards of residential structure shall not exceed the tree line on the lot. Satellite dishes located on non-residential buildings shall not exceed ten (10) feet in height above the highest point of the structure.**

AT&T's Facility does not entail the installation of a satellite dish and this provision does not apply to AT&T's Facility.

- 544.3 All wireless communication facilities shall be sited to limit visibility from abutting properties. Tower facilities may not be placed in open areas, but shall be surrounded by a mature stand of trees.**

AT&T's Facility will be partially screened from view by existing commercial buildings and existing vegetation on the Site. AT&T will comply with any reasonable conditions pertaining to additional screening which may be placed upon a favorable decision.

- 544.4 Towers and satellite dishes shall be painted or otherwise colored so they will blend in with the landscape or structure on which they are located. A different color scheme shall be used to blend the structure with the background below and above the tree or building line.**

AT&T will paint the Monopole a non-reflective gray color unless otherwise conditioned.



544.5 Towers and antennas shall be designed and constructed to withstand a category 5 hurricane.

AT&T's Facility will be designed and constructed in accordance with all applicable building codes and structural standards.

544.6 An applicant proposing a wireless communication facility in a residential zoning district shall prove to the satisfaction of the Board that the visual, economic, and aesthetic impacts of the facility on residential abutters will be minimal; and shall also prove that the proposed location is required due to technical, topographic or the unique circumstances.

The Site is within the MAR zoning district and this provision does not apply to this Application. However, AT&T's proposed Facility will be located upon a large parcel of land, partially screened by existing buildings so that potential visual impacts are minimized and the aesthetic qualities of the Town of Wareham are preserved. The Facility will not be contrary to the public interest and welfare. The Facility will benefit those living and working in, and traveling through the area by providing enhanced wireless telecommunication services. In fact, AT&T submits that the proposed Facility will aid in public safety by providing and improving wireless communications services to the residents, businesses, commuters, and emergency personnel utilizing wireless communications in the immediate vicinity and along the nearby roads. The Facility will not generate any unreasonable noise, odor, fumes, glare, smoke, or dust or require additional commercial signage. The Facility will have no negative impact on property values in the area. No significant increase in traffic or hindrance to pedestrian movements will result from the Facility. On average, only one or two round trip visits per month are required to service and maintain the Facility. The Facility is unmanned and will have no negative effect on the adjoining lots. This Facility does not require police or fire protection because the installation has its own monitoring equipment that can detect malfunction and/or tampering. Please refer to the Report of a Radiofrequency Engineer, Coverage Maps, and Alternative Sites Analysis submitted herewith. The Facility is required to provide necessary coverage to fill a significant gap in AT&T's wireless communications services network. There is a lack of existing tall structures in the immediate vicinity available to AT&T to which AT&T could attach antennas and which are sufficiently tall to provide the needed coverage.

544.7 Lighting of communication facilities and other appurtenances shall be limited to that which is required by Federal Law.

AT&T's Facility will comply with the terms of this provision of the Bylaw.



545 APPLICATION REQUIREMENTS

In addition to materials required by the Board of Appeals for a Special Permit application, the applicant for a communication facility shall provide.

- 545.1 A statement of need for the proposed facility with as much specific information is required to demonstrate the need, including a description of the proposed system and how the proposed facility would eliminate or alleviate an existing deficiency or limitation.**

Please refer to the Report of a Radiofrequency Engineer and Coverage Maps submitted herewith.

- 545.2 A color photograph or rendition of the proposed tower with its antenna and/or panels. A rendition shall also be prepared showing a view of the tower, antenna, or dish from the nearest street.**

Please refer to the Photographs and Simulations submitted herewith.

- 545.3 The following information prepared by one or more professional engineers;**

- a) A description of the tower and the technical, economic, and other reasons for the proposed location, height, and design;**
- b) Confirmation that the tower complies with Federal and State standards;**
- c) A description of the capacity of the tower including the number and type of panels, antenna, and/or transmitter receivers that it can accommodate and the basis for these calculations.**

Please refer to the Plans and the Structural Letter submitted herewith.

546 SPECIAL PERMIT REVIEW

- 546.1 Applications shall be approved or approved with conditions, if the petitioner can fulfill the requirements of these regulations to the satisfaction of the Board.**

AT&T respectfully asserts that it has provided materials of sufficient detail for the Board to make an informed decision. AT&T will cooperate with the Board and will comply with all reasonable requests for additional information.

- 546.2 Applications shall be denied if the petitioner cannot fulfill the requirements for these regulations to the satisfaction of the Board.**

AT&T acknowledges the terms of this provision of the Bylaw.



546.3 When considering an application for a communication facility, the Board shall place great emphasis on the proximity of the facility to residential dwellings and its impact on these residences, new facilities shall only be considered after a finding that existing (or previously approved) facilities cannot accommodate the proposed use(s).

Please refer to the Report of a Radiofrequency Engineer, Coverage Maps, and MPE Study submitted herewith. The nearest residence is located over 523' away from the Facility. AT&T's Facility will be a passive use and will not produce odor, smoke, glare, waste, unreasonable noise or significant amounts of traffic. AT&T's Facility will not adversely impact upon neighboring properties and will provide a benefit to the residents, businesses and travelers within the Town of Wareham in the form of improved wireless communications services infrastructure. There are currently no existing facilities from which AT&T can provide the necessary coverage to fill the significant gap in its wireless communications services network.

546.4 When considering an application for an antenna or dish to be placed on a structure, the Board shall consider the visual impact of the unit from the abutting neighborhoods and streets, and highways.

AT&T's Facility does not involve placing antennas on an existing structure and this provision does not apply to this Application.

CONCLUSION

As evidenced by the materials submitted with the Application and as will be further demonstrated by AT&T through evidence submitted to the Board at the public hearing(s) in connection herewith, the Facility satisfies the intent and objectives of the Bylaw. The Facility will not have any adverse effect on property values in the area. The Facility will not be dangerous to the public health or safety as it is designed to comply with all applicable FCC requirements relating to radio frequency emissions and will comply with all applicable requirements of the Massachusetts building code. The Facility is a passive use, and will not cause any nuisance such as unreasonable noise, vibration, smoke, odor or dust. Further, the Facility will improve communication coverage to residents, commercial establishments and travelers through the area and improves connections in this area of the Town of Wareham. The Facility will greatly improve emergency communications for police and fire personnel by reducing the number and frequency of dropped and incomplete calls due to weak signals and adding an additional layer of communication to traditional land lines. In fact, published reports have highlighted the fact that during and after adverse major weather events, including ice storms, wireless telecommunications has been the only form of reliable communication. Lastly, the installation of the Facility at the Site will assist the Town of Wareham in complying with its obligations under the TCA.



Town of Wareham
Zoning Board of Appeals
December 4, 2013
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Applicant respectfully requests that the Board grant all necessary relief to install, operate and maintain the Facility. For the foregoing reasons, as well as to satisfy the mandate of the Federal Government to facilitate competition in the telecommunications industry as set forth in the TCA, Applicant respectfully requests that the Board grant the foregoing zoning relief. We respectfully submit that the standards for relief as set forth in the Bylaw as well as Massachusetts law relating to zoning must be interpreted and applied such that the decision issued by the Board is in conformance with the TCA. Accordingly, a denial of the foregoing petition would effectively prohibit AT&T from providing adequate service to the Town of Wareham, would unreasonably discriminate among providers of functionally equivalent services and thus would be contrary to the purpose and intent of the TCA.

Sincerely,

Brown Rudnick LLP



Michael R. Dolan., Esq.

SECTION 2

TOWN OF WAREHAM
ZONING BOARD OF APPEALS

APPLICATION FOR A PUBLIC HEARING FOR A VARIANCE/SPECIAL PERMIT

Certain uses are allowed in several zoning districts only by means of a Variance and/or Special Permit from the Zoning Board of Appeals. Those uses are indicated in the Wareham Zoning By-Laws. To apply for a Variance/Special Permit from the Zoning Board of Appeals, please do the following:

- o Complete this form.
- o Complete information packets. (Directions attached)
- o Submit application form and packet to Town Clerk for signature.
- o Submit application form and packet to Town Collector for signature.
- o Submit completed form, packets, and appropriate fees** to the Zoning Board of Appeals secretary.

**Permits may be issued only after a public hearing. There is a filing fee of \$300.00 per lot, per application for all non-conforming residential lots, whether built upon or not. There is a filing fee of \$750.00 per lot, per application for all commercial applications. In the case of a multi-family development, the fee is \$300.00 plus an additional \$50.00 for every unit over two (2).

**A check to cover two (2) legal advertisements for the public hearing should be made payable to Wareham Week in the amount of \$70.00.

**The applicant will also be responsible for the cost of sending out abutters notices by Certified Mail. Please see secretary for expected fee for mailings.

I hereby apply for a Variance/Special Permit for a use to be made of the following described place:

STREET & NUMBER: 2 Warr Avenue LOT: 1002 MAP: 46
ZONING DISTRICT: Marine
USE REQUESTED: Special Permit - Wireless Communications Facility (if applicable, dimensional variance for height)
OWNER OF LAND & BUILDING: Zecco Marine LLC TEL.# 508-295-3494
ADDRESS OF OWNER: 40 Pine Tree Drive, Buzzards Bay, MA 02532
PERSON(S) WHO WILL UTILIZE PERMIT: New Cingular Wireless PCS, LLC (AT&T)
ADDRESS: 500 Cochituate Road, Suites 13 & 14, Framingham, MA 01701
DATE: _____ SIGNATURE: _____

This application was received on the date stamped here:

Town Clerk: _____	Date: _____
Tax Collector: _____	Date: _____
Planning/Zoning Dept.: _____	Date: _____
Application fee paid: _____	Check #: _____ Receipt: _____
Advertising fee paid: _____	Check #: _____ Receipt: _____
Abutters fee paid: _____	Check #: _____ Receipt: _____

APPLICANT/CONTRACTOR/REPRESENTATIVE INFORMATION SHEET

Comments: AT&T requests a special permit for a Wireless Communications Facility pursuant to Article 3, Section 321; Article 5, Section 540; and Article 14, Section 1450 of the Zoning Bylaw of the Town of Wareham, Massachusetts General Laws Ch. 40A, and the Telecommunications Act of 1996, and such other relief as deemed necessary.

SECTION 3



November 18, 2013

Town of Wareham
54 Marion Road
Wareham, MA 02571

RE: Letter of Authorization
2 Warr Avenue, Wareham, MA
AT&T Site Name: Zecco Marina
AT&T Site No.: MA1433S

Zecco Marina LLC ("Property Owners") do hereby appoint **New Cingular Wireless PCS, LLC (AT&T)** ("Carrier") their agent for the purpose of consummating any application necessary to ensure Carrier's ability to use the Property as a telecommunications facility. The Property Owners understand and agree that this application may be denied, modified, or approved with conditions and that such conditions or modifications must be complied with prior to the issuance of building permits. It is understood by both Property Owners and Carrier that the authorization given herein does not constitute a commitment by Property Owners to Carrier or otherwise convey right to the Property to Carrier, and that such conveyance shall only be accomplished by the execution of a further agreement by both parties.

By:

Zecco Marina LLC

A handwritten signature in cursive script, appearing to read "Patricia A. Zecco", written over a horizontal line.

Date: 11/19/13

Print Name & Title:

PATRICK A. ZECCO (Principal)

SECTION 4

REFERENCE COPY

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: REGINALD YOUNGBLOOD
 NEW CINGULAR WIRELESS PCS, LLC
 2200 N. GREENVILLE AVE., 1W
 RICHARDSON, TX 75082

Call Sign KNLF216	File Number
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 07-07-2005	Effective Date 11-24-2012	Expiration Date 06-23-2015	Print Date
Market Number MTA008	Channel Block A	Sub-Market Designator 17	
Market Name Boston-Providence			
1st Build-out Date 06-23-2000	2nd Build-out Date 06-23-2005	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

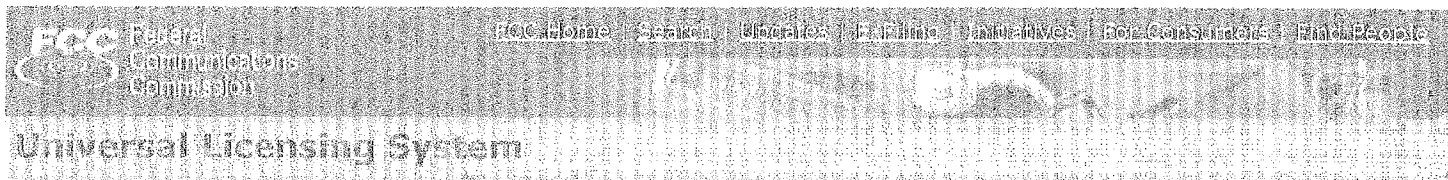
Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB

April 2009



FCC > ULS > Online Systems > License Search

[FCC Site Map](#)

ULS License

Cellular License - KNKA226 - NEW CINGULAR WIRELESS PCS, LLC

[HELP](#)

[New Search](#) [Printable Page](#) [Reference Copy](#) [Map License](#)

MAIN		ADMIN		LOCATIONS	
This license has pending applications: 0004078789					
Call Sign	KNKA226	Radio Service	CL - Cellular		
Status	Active	Auth Type	Regular		
Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	A (View Frequencies)		
Submarket	0	Phase	2		
Dates					
Grant	10/05/2004	Expiration	10/01/2014		
Effective	02/08/2007	Cancellation			
Five Year Buildout Date					
06/28/1999					
Control Points					
2	100 LOWDER BROOK DR, NORFOLK, WESTWOOD, MA P: (617)462-7094				
Licensee					
FRN	0003291192 (View Ownership Filing)	Type	Limited Liability Company		
Licensee					
NEW CINGULAR WIRELESS PCS, LLC 5601 LEGACY DRIVE, MS: A-3 PLANO, TX 75024 ATTN KELLYE E. ABERNATHY		P:(469)229-7422 F:(469)229-7297 E:KELLYE.E.ABERNATHY@CINGULAR.COM			
Contact					
AT&T MOBILITY LLC DAVID C JATLOW 11760 US HIGHWAY 1 NORTH PALM BEACH, FL 33408		P:(202)255-1679 F:(561)279-2097 E:DAVID.JATLOW@CINGULAR.COM			
Ownership and Qualifications					
Radio Service Type	Mobile				
Regulatory Status	Common Carrier	Interconnected	Yes		

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race

Ethnicity

Gender

UJS Help	UJS Glossary - FAQ - Online Help - Technical Support - Licensing Support
UJS Online Systems	CORES - UJS Online Filing - License Search - Application Search - Archive License Search
About UJS	Privacy Statement - About UJS - UJS Home
Basic Search	<input type="text"/> = <input type="text"/> <input type="button" value="SEARCH"/>

[FCC](#) | [Wireless](#) | [UJS](#) | [CORES](#)

[Help](#) | [Tech Support](#)

Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Phone: 1-877-480-3201
TTY: 1-717-338-2824
[Submit Help Request](#)

PCS Broadband License - KDW-F216 - New Cingular Wireless PCS, LLC

Licensed			
FRN	0003291192	Type	Corporation
Licensed			
New Cingular Wireless PCS, LLC		P: (469)229-7471	
5601 Legacy Drive, M5:A-3		F: (469)229-7297	
PLANO, TX 75024		E: FCCMW@att.com	
ATTN: Reginald Youngblood			

AT&T Mobility LLC
Michael P Goggin Esq
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN: Michael P. Goggin
P: (202) 457-2055
F: (202) 457-3073
E: michael.p.goggin@att.com

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes
Alien Ownership	The Applicant answered "No" to each of the Alien Ownership que		

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Tribal Land Bidding Credits

This license did not have tribal land bidding credits.

Demographics

Race

Ethnicity

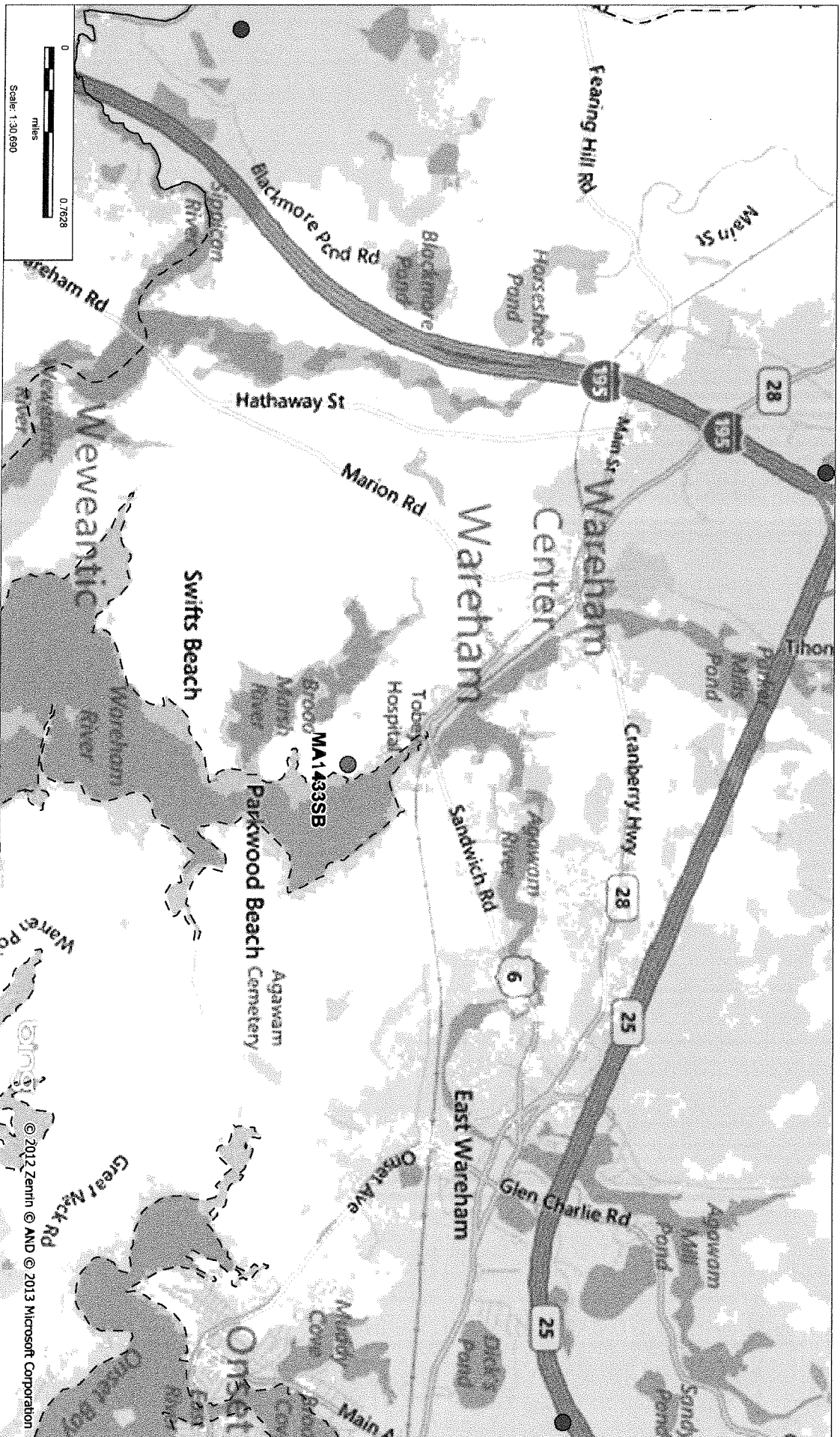
Gender

SECTION 5



Current AT&T coverage in Wareham, MA

- On Air sites
- Proposed sites
- Current coverage
- Proposed coverage

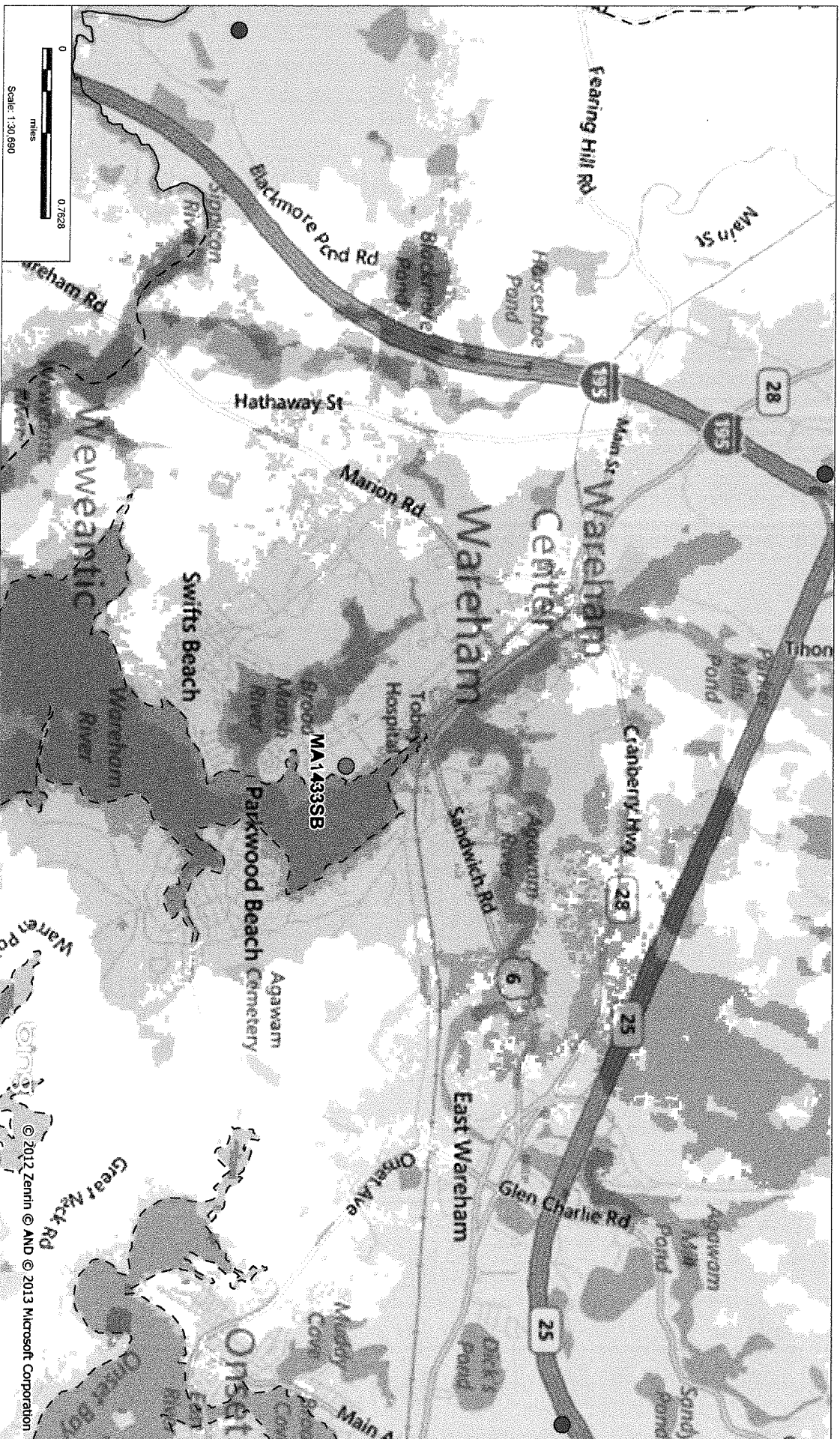




at&t

Proposed AT&T coverage solution in Wareham, MA

- On Air sites
- Proposed sites
- Current coverage
- Proposed coverage



REPORT OF
RADIO FREQUENCY ENGINEER

The undersigned hereby states the following in support of the application by New Cingular Wireless PCS, LLC ("*AT&T*") to construct a 150' Monopole and attach panel antennas, GPS antennas, cables, and install electronic equipment and other appurtenances and associated equipment thereto, and add fiber cable, coaxial cable, electronic equipment and other appurtenances as shown of the plans submitted with the application (the "Facility") located at 2 Warr Avenue (Assessor's Map 46, Lot 1002), Wareham, Massachusetts (the "Site").

1. I am a Radio Frequency Engineer employed by AT&T, with an office located at 550 Cochituate Road, Framingham, Massachusetts. Attached is a copy of my qualifications.
2. My primary responsibilities include radio frequency design and planning in the Commonwealth of Massachusetts, including the Town of Wareham and surrounding communities.
3. As enabled under its Federal Communications Commission ("FCC") License, AT&T seeks to design its wireless network to provide reliable and adequate wireless services to its customers, whether those customers are on the street, in a vehicle, or in a building. Providing reliable and adequate service to its customers in each context is critical for AT&T to provide the quality of wireless service that customers demand, and to meet the objectives of Congress that a robust, competitive and low cost wireless communications capacity be developed to serve the entire nation.
4. AT&T is also designing a network to provide high speed data services commonly referred to as "long term evolution" service ("LTE"). LTE will be incorporated into this Facility.
5. AT&T is using its best efforts, to the maximum extent possible, to install its wireless communications services facilities network utilizing existing structures to avoid the need to construct new tower sites. In this instance, there are no existing structures of sufficient height available to AT&T upon which AT&T's Facility could be placed to provide adequate wireless communications services coverage to fill the existing significant gap in AT&T's network in the Town of Wareham.
6. I have thoroughly reviewed the radio frequency engineering studies, reports and computer models prepared by AT&T with respect to the Facility.
7. In order to build out its network and meet customer demand for voice and data services, as well as enhance its network to improve high speed data services, AT&T must have in place a system of low power 'cell sites' to serve portable wireless communication handsets and mobile telephones. A typical cell site, such as the one proposed, consists of antennas mounted to a building, tower, church or other structure. The antennas are connected to radio operating equipment housed at or near the structure.
8. To maintain effective, reliable and uninterrupted service, there must be a continuous series of cell sites located within close proximity to each other so as to overlap in a system comparable to a honeycomb pattern. If there is no cell site available to accept/receive the signal, network service to the mobile device, data service will terminate involuntarily. Accordingly, the overlap

of coverage is necessary for the signal to transfer from one cell site to another cell site seamlessly and without involuntary termination.

9. A number of factors determine the distance between cell sites, including, but not limited to, topography, physical obstructions, foliage, antenna height, operating frequency and line-of-sight.
10. Based on the radio frequency studies, reports and computer models prepared in connection with this project, it is my professional assertion that there is inadequate network service available to AT&T customers within the Town of Wareham, especially along Church Ave in the area of Tobey Hospital in Wareham, MA and surrounding neighborhoods.
11. Based on the radio frequency studies, reports and computer models prepared in connection with this Facility, it is my further professional opinion that AT&T would be able to achieve the coverage objective by filling these significant gaps in coverage through the installation of the Facility at the Site.
12. The Facility will enhance AT&T's ability to provide adequate coverage in the area and will increase its capacity to better serve the residents and businesses around these areas of Wareham and to individuals traveling through these areas.
13. The Facility will be in compliance with the FCC Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation.
14. The Facility will be installed, erected, maintained and used in compliance with all applicable Federal, State and local regulations, including, the regulations administered by the Federal Aviation Administration, Massachusetts Aeronautics Commission and the FCC.
15. AT&T is assigned specific frequencies within which it must operate its facilities. The proposed facility will not interfere with existing public safety telecommunications systems, television or radio signals.
16. Based upon the best radio frequency technology available at this time, it is my professional opinion that the Facility is at the height that is needed to ensure adequate service to area residents and businesses within the geographic area described above.

Executed this 2nd day of December, 2013.



Ryan Ramos, RF ENGINEER, AT&T

SECTION 6

STATEMENT OF
SITE ACQUISITION SPECIALIST

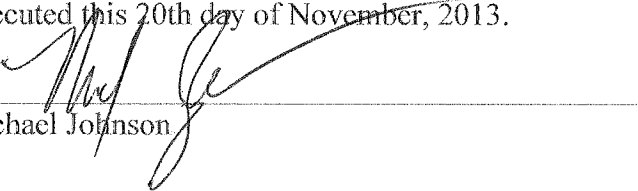
The undersigned hereby states the following in support of the application by New Cingular Wireless PCS, LLC by and through its Manager AT&T Mobility Corporation ("AT&T") to construct a 100' (above ground level, hereafter "AGL") monopole-style tower (the "Monopole"), install twelve (12) panel antennas (four antennas per sector) at the 96' AGL centerline mark, together with related amplifiers, cables, fiber and other associated antenna equipment, including remote radio heads, surge arrestors, and global positioning system antennas with associated electronic equipment, emergency backup power generator and other appurtenances in AT&T's proposed equipment shelter located within a compound enclosed by a chain link fence, as well as an access drive (the "Facility") located at 2 Warr Avenue (Assessor's Map 46, Lot 1002), Wareham, Massachusetts (the "Site").

1. I am a Site Acquisition Specialist for TRM, contractor to AT&T, responsible for determining and acquiring appropriate locations of future sites in New England to be used in the development of telecommunications facilities for AT&T, a provider of wireless communications services.
2. AT&T seeks to build national wireless networks using personal communication services ("PCS") technology. PCS technology is a generation of wireless service that uses digital transmission to improve the services available. It provides a clearer connection and fewer dropped connections for its users, and better accommodates the requirements of data transmission.
3. AT&T is also enhancing its data network to provide high speed data services commonly referred to as "long term evolution" ("LTE"). Currently, LTE is designed to improve AT&T's data services network. AT&T is using its best efforts, to the maximum extent possible, to install the LTE network upgrade by utilizing existing structures to avoid the need to construct new tower sites. LTE will be incorporated into this Facility. LTE will be incorporated into this Facility.
4. As enabled under its Federal Communications Commission (FCC) license, AT&T seeks to design its wireless networks to provide reliable services to its customers, whether those customers are on the street, in a vehicle, or in a building. Providing reliable service to its customers in each context is critical for AT&T to provide the quality of wireless service that customers demand, and to meet the objectives of Congress that a robust, competitive and low cost wireless communications capacity be developed to serve the entire nation.
5. In order to build out its network and meet customer demand, AT&T must have in place a system of 'cell sites' to serve portable wireless communication handsets and mobile telephones. A typical cell site consists of panel antennas mounted to a building, tower, church or other structure. The antennas are connected to radio operating equipment housed at or near the structure.
6. To maintain effective, reliable and uninterrupted service, there must be a continuous series of cell sites located within close proximity to each other so as to overlap in a system comparable to a honeycomb pattern. If there is no cell site available to accept/receive the signal, network service to the wireless device, data service will terminate involuntarily. Accordingly, the overlap of coverage is necessary for the signal to transfer from one cell site to another cell site seamlessly and without involuntary termination.

7. In conformity with its FCC license, AT&T is actively building its network. Since AT&T began providing service to Massachusetts, it continues to acquire interests in sites for additional facilities and is applying for, and obtaining local governmental approvals to construct the transmission sites in order to eliminate gaps in service coverage and/or to provide new areas of coverage to AT&T customers. AT&T is a tenant of Zecco Marine, LLC with respect to this Facility.
8. It is my understanding that the development of PCS sites in and around the Town of Wareham are critical to the overall engineering and technical plan of AT&T's network in Massachusetts. Furthermore, this Facility will connect to adjacent sites and will provide continuous coverage to the residents of Westport in their homes and businesses and as they commute from their homes and/or businesses through these communities and along the State and Federal highways in the area.
9. To connect different service areas, AT&T has designed an integrated network of general site locations which AT&T's Radio Frequency ("RF") Engineers have determined would provide the most appropriate locations around which to construct a cell site ("Search Area(s)").
10. Based on the RF Engineer's tests and surveys, AT&T determined that its network required a facility to be placed in the area of Wareham where the Site is located, which could then connect to existing and/or future sites in proximity to the proposed location. In order to find appropriate locations within this general Search Area, I reviewed potential locations in and around the target area in order to assess the viability ("Viability Analysis") of the site from a number of different perspectives.
11. In conducting the Viability Analysis for this Site, either myself or other Site Acquisition Specialists with whom I work (and have personal knowledge of the work that they may have completed) and as is our normal practice for all site viability determinations, we first looked at the Search Area/coverage objective that AT&T's RF Engineers were trying to fulfill and then analyzed potential parcels of land in the given Search Area from the following perspectives: (a) determining if there are any existing buildings and/or structures that are at a height and/or structural capacity to meet the coverage objectives; (b) the size, shape and dimensions of the parcels in the area; (c) compliance with local zoning requirements, especially any specific wireless communications services regulation, and ordinances; (d) compliance with any State regulations, such as Wetlands and/or Waterways Protection, Historic, etc.; (e) compliance with any Federal regulations, such as FAA, FCC, NEPA, etc.; (f) distances to major roadways, residential districts, commercial buildings, schools, downtown centers and other areas that will have AT&T customers; and (g) a variety of site specific observations that may affect the proper siting of a wireless communications facility in a specific target area.
12. In my opinion, with the significant lack of existing structures and other available parcels of land in the area, the Site does have unique characteristics that make it ideal for the development of a cell site. This is based on a number of factors, including: the size of the parcel which allows ample buffers of natural vegetation to help screen the Facility from view; the current uses at the Site; the lack of other available tall structures in the area; and, the proximity of the Site to vehicular and non-vehicular wireless traffic and/or AT&T customers.
13. We understand that, in light of the federal Telecommunications Act of 1996, wireless telecommunications facilities are allowed in all zoning districts, including residential zones and structures containing a residential use, with the approval of the Zoning Board of Appeals.

14. Based on my review of the Search Area, there are currently no available, existing wireless structures upon which AT&T could attach to provide coverage to resolve the existing significant gaps in coverage that will be provided by the Facility.
15. Based on my review of the Search Area, there are no other available, existing structures upon which AT&T could attach to provide coverage to resolve the existing significant gaps in coverage that will be provided by the Facility.
16. In addition to the Site, either myself, or other Site Acquisition Specialists with whom I work (and have personal knowledge of the work that they may have completed), have reviewed the following additional parcels or areas within the Search Area, or in close proximity to the Search Area for the potential development of the Facility. For the following reasons these sites were unavailable:
- *British Landing, 53 Main Street, Wareham, MA:* chimney installation reviewed. The smokestack is not structurally capable of supporting the antennas and equipment.
 - *Church Ave, Wareham, MA:* Proposed raw land monopole installation rejected by AT&T RF Engineer as not being able to address coverage objective due to high terrain which can be a potential interferer.
 - *1 Hidden Cove Lane Wareham, MA:* Proposed raw land monopole installation rejected by AT&T RF Engineer as not being able to address coverage objective due to high terrain which can be a potential interferer.
 - *Tobey Hospital, 43 High Street, Wareham, MA:* rooftop installation, approved by AT&T RF Engineer as back up candidate. However, property owner was not interested in entering into an agreement to build a telecommunications facility.
17. Based on the above, it is my opinion as a Site Acquisition Specialist that the Site is well suited for the development of a wireless communications facility in this area of Wareham, Massachusetts. In addition, the Site has characteristics that will minimize the impact on the visual landscape given the factors used in analyzing sites for wireless communications facility development and provides the least intrusive means to fill AT&T's significant gap in coverage in the area.

Executed this 20th day of November, 2013.

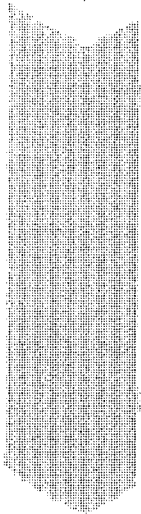

Michael Johnson

SECTION 7



HexPort Multi-Band ANTENNA

Model HPA-15H-BU-HP



Hexport Multi-Band Antenna Array

Benefits

- ◆ Includes WCS Band
- ◆ Reduces tower loading
- ◆ Frees up space for tower mounted E-nodes
- ◆ Single radome with six ports
- ◆ All Band design simplifies radio assignments
- ◆ Sharp elevation beam eases network planning

Features

- ◆ High Band Ports include WCS Band
- ◆ Four High Band ports with two Low Band ports in one antenna
- ◆ Sharp elevation beam
- ◆ Excellent elevation side-lobe performance
- ◆ Excellent MIMO performance due to array spacing
- ◆ Excellent PIM Performance
- ◆ A multi-network solution in one radome

Applications

- ◆ 4x4 MIMO on High Band and 2x2 MIMO on Low Band
- ◆ Adding additional capacity without adding additional antennas
- ◆ Adding WCS Band without increasing antenna count





HexPort Multi-Band Antenna

Model HPA-65R-GU110

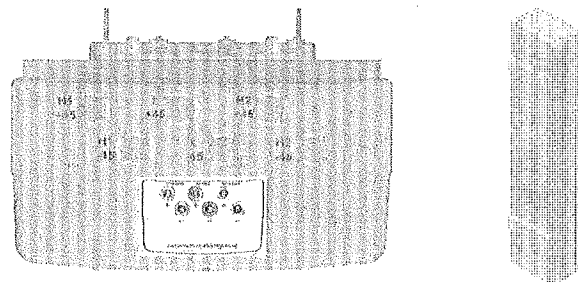
HPA-65R Multi-Band Antenna

Electrical Specifications

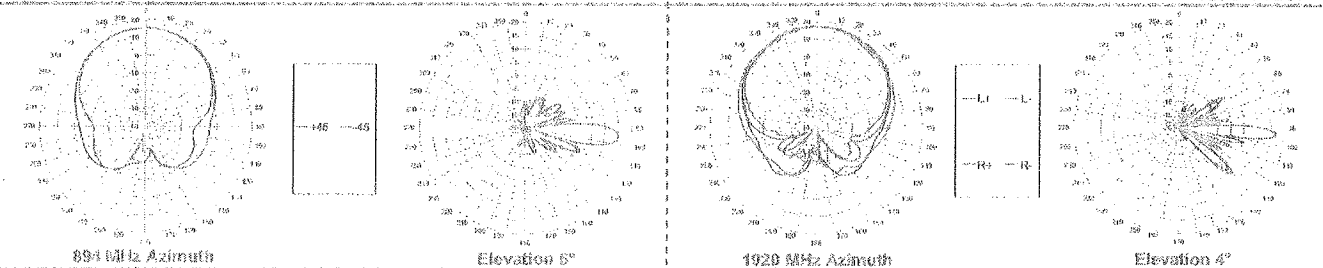
Frequency Range	2 X Low Band Ports which cover the full range from 698-894 MHz		4 X High Band Ports which cover the full range from 1710-2360 MHz			
	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz	2305-2360 MHz	
Gain	14.1 dBi	14.8 dBi	16.9 dBi	16.3 dBi	17.2 dBi	17.4 dBi
Azimuth Beamwidth (-3dB)	66°	65°	61°	66°	62°	57°
Elevation Beamwidth (-3dB)	12.5°	10.5°	5.7°	6.3°	5.1°	4.5°
Electrical DownTilt	0° to 10°	0° to 10°	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	< -17 dB	< -19 dB	< -19 dB	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Cross-Polar Discrimination (at Peak)	> 25 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination (at ± 60°)	> 17 dB	> 14 dB	> 17 dB	> 17 dB	> 17 dB	> 17 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 26 dB	> 25 dB	> 26 dB	> 26 dB
VSWR	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc
Input Power	500 Watts CW	500 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical Specifications

Dimensions (LxWxD)	72.0 x 14.8 x 9.0 inches (1828 x 376 x 229 mm)
Survival Wind Speed	> 150 mph
Front Wind Load	247 lbs (1099 N) @ 100 mph (161 kph)
Side Wind Load	165 lbs (735 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	9.7 ft ² (0.90 m ²)
Weight (without Mounting)	51 lbs (23 kg)
RET System Weight	5.0 lbs (2.3 kg)
Connector	6; 7-16 DIN female long neck
Mounting Pole	2.5 inches (5-12 cm)



Antenna Patterns*



*Typical antenna patterns. For detail information on antenna pattern, please contact us at info@cciprducts.com. All specifications are subject to change without notice.

www.cciprducts.com

USA HQ: 89 Leaning Street, South Hackensack, NJ 07606 Telephone: 201-342-3338,
Canada: 411 Leggot Drive, Suite 104, Ottawa, ON, Canada K2K 3C9 Telephone: 613-591-6696



HexPort Multi-Band ANTENNA

Model HPA-COR-8110-H6

RET [Remote Electrical Tilt] System

General Specification

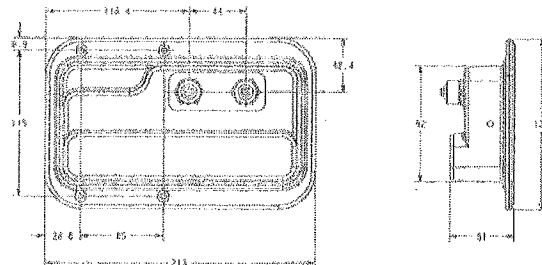
Part Number	BSA-RET200
Protocols	AISG 2.0
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40°C to +70°C

Electrical Specification

Interface Signal	Data dc
Input Voltage Range	10-30 Vdc, Specifications at +24 VDC
Current consumption during tilting	120mA at Vin = 24V
Current consumption idle	55mA at Vin=24V
Hardware Interface	AISG - RS 485 A/B
Input Connector	1x8-pin Daisy Chain In Male
Output Connector	1x8-pin Daisy Chain Out Female

Mechanical Specification and Dimensions

Housing Material	ASA / ABS / Aluminum
Dimensions (H x W x D)	8 x 5 x 2 inches (213 x 135 x 51 mm)
Weight	1.5 lbs (0.68 kg)



Standards Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55022
Immunity	EN 55024
Environmental	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC 60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-2-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN60529 IP24

Regulatory Certification

AISG, FCC Part 15 Class B, CE, CSA US

www.cciproducs.com

USA HQ: 89 Leuning Street, South Hackensack, NJ 07606 Telephone: 201-342-3338.
Canada: 411 Legget Drive, Suite 104, Ottawa, ON, Canada K2K 3C9 Telephone: 613-591-6696

3/20/2013

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Revision 1.0

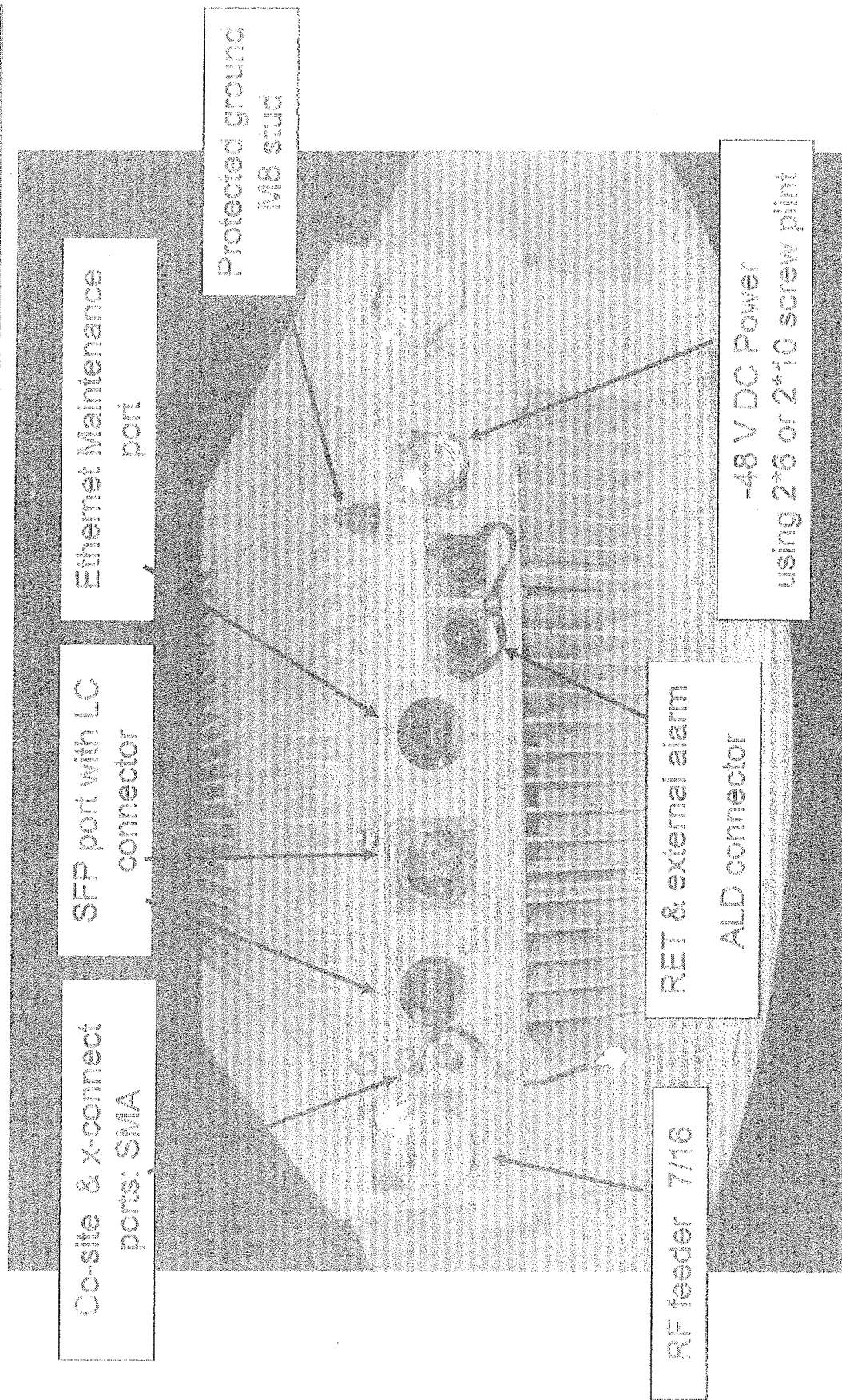
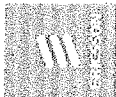
RRUS 11 – Dual PA RRU.

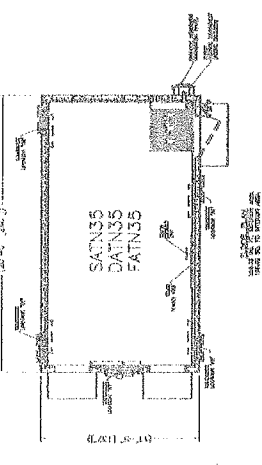
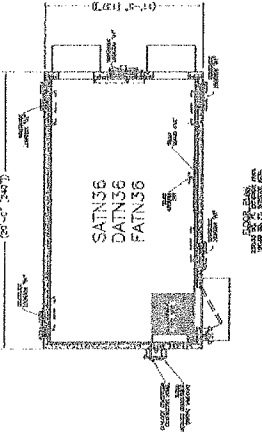
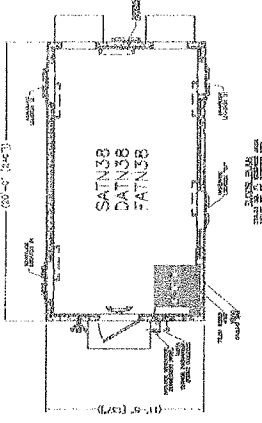
Technical Data

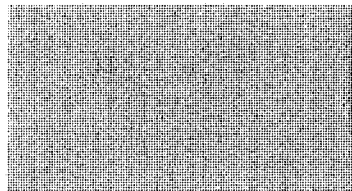
- > Multi standard
- > RF: 2x30 Watts
- > Carrier BW: 1.4 – 20 MHz
- > Alarms: 2
- > Dimensions (with sunshield):
 - Width: 17.0 in
 - Height: 17.8 in
 - Depth: 7.2 in
 - Weight: 55 lbs (Band 12)
 - Weight: 50 lbs (Band 4)
- > Temperature: -40 to +131 F
- > Cooling: Self convection
- > Power: -48 VDC
- > Rec. fuse size 20 Amp
 - Rec. DC cable:
 - > 6 mm² up to 60 meters
 - > 10 mm² over 60 meters
 - > Shielded
- > Power Cons: 200 Watts typ.



RRUS-11 I/F







SD050



GENERAC

INDUSTRIAL

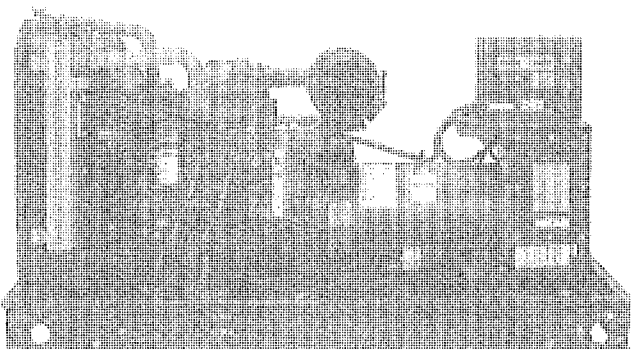
Industrial Diesel Generator Set

EPA Emissions Certification: Tier III

50 kW Diesel

1 of 5

Standby Power Rating
50KW 60 Hz



features

benefits

Generator Set

- | | |
|----------------------------------|-----------------------------------|
| • PROTOTYPE & TORSIONALLY TESTED | ▶ PROVIDES A PROVEN UNIT |
| • UL2200 TESTED | ▶ ENSURES A QUALITY PRODUCT |
| • RHINO COAT PAINT SYSTEM | ▶ IMPROVES RESISTANCE TO ELEMENTS |
| • SOUND LEVEL 2 ENCLOSURE | ▶ 71dbA @ 7 METERS (23FT) |

Engine

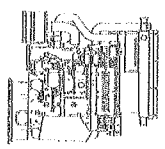
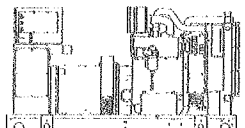
- | | |
|---------------------------------------|--------------------------------------|
| • EPA TIER CERTIFIED | ▶ ENVIRONMENTALLY FRIENDLY |
| • INDUSTRIAL TESTED, GENERAC APPROVED | ▶ ENSURES INDUSTRIAL STANDARDS |
| • POWER-MATCHED OUTPUT | ▶ ENGINEERED FOR PERFORMANCE |
| • INDUSTRIAL GRADE | ▶ IMPROVES LONGEVITY AND RELIABILITY |

Alternator

- | | |
|-----------------------------------|-----------------------------------|
| • TWO-THIRDS PITCH | ▶ ELIMINATES HARMFUL 3RD HARMONIC |
| • LAYER WOUND ROTOR & STATOR | ▶ IMPROVES COOLING |
| • CLASS H MATERIALS | ▶ HEAT TOLERANT DESIGN |
| • DIGITAL 3-PHASE VOLTAGE CONTROL | ▶ FAST AND ACCURATE RESPONSE |

Controls

- | | |
|---|-----------------------------------|
| • ENCAPSULATED BOARD W/ SEALED HARNESS | ▶ EASY, AFFORDABLE REPLACEMENT |
| • 4-20mA VOLTAGE-TO-CURRENT SENSORS | ▶ NOISE RESISTANT 24/7 MONITORING |
| • SURFACE-MOUNT TECHNOLOGY | ▶ PROVIDES VIBRATION RESISTANCE |
| • ADVANCED DIAGNOSTICS & COMMUNICATIONS | ▶ HARDENED RELIABILITY |



primary codes and standards



SD050

application and engineering data

ENGINE SPECIFICATIONS

General

Make	Iveco / FPT
EPA Emissions Compliance	Tier III
EPA Emissions Reference	See Emissions Data Sheet
Cylinder #	4
Type	Diesel
Displacement - l (cu. in.)	4.5 (274)
Bore - mm (in.)	105 (4.1)
Stroke - mm (in.)	130 (5.1)
Compression Ratio	17.5:1
Intake Air Method	Naturally Aspirated
Cylinder Head Type	2 Valve
Piston Type	Aluminum
Crankshaft Type	Forged Steel
Oil Cooler Type	Oil / Water Cooler

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow
Crankcase Capacity - l (gal)(qts)	13.6 (3.6) (14.4)

Cooling System

Cooling System Type	Closed
Water Pump	Ben-Dayen Centrifugal
Fan Type	Pusher
Fan Blade Number	2538 (10)
Fan Diameter (in.)	26
Coolant Heater Wattage	800
Coolant Heater Standard Voltage	120

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	5
Fuel Inlet Pump Make	Standyne
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Engine Type	Direct Injection
Fuel Supply Line - mm (in.)	1/4 inch Npt
Fuel Return Line - mm (in.)	1/4 inch Npt

Engine Electrical System

System Voltage	12VDC
Battery Charging Alternator	90 Amp
Battery Size (at 0 °C)	Optima Redtop
Battery Setup	24
Battery Voltage	12VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390
Poles	4
Field Type	Revolving
Insulation Class - Rotor	F
Insulation Class - Stator	H
Total Harmonic Distortion	< 5%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	PMG
Bearings	Single Sealed Cartridge
Coupling	Direct Flexible Disc
Load Capacity - Standby	100%
Load Capacity - Prime	100%
Prototype Short Circuit Test	Y

Voltage Regulator Type

Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	± 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99
 NFPA 110
 ISO 8528-5
 ISO 1708A.5
 ISO 3046
 BS5514
 SAE J1349
 DIN6271
 IEEE C62.41 TESTING
 NEMA ICS 1

Rating Definitions:

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

SD050

operating data (60Hz)

POWER RATINGS (kW)

Single-Phase 120/240VAC @1.0pf
Three-Phase 120/208VAC @0.8pf
Three-Phase 120/240VAC @0.8pf
Three-Phase 277/480VAC @0.8pf
Three-Phase 346/600VAC @0.8pf

STANDBY	
50	Amps: 208
	Amps: -
	Amps: -
	Amps: -
	Amps: -

NOTE: Generator output limited to 202A

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

Alternator*	kW	480VAC						208/240VAC					
		10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	50	-	-	-	-	-	-	26	39	52	65	77	90
Upsize 1		-	-	-	-	-	-	-	-	-	-	-	-
Upsize 2		-	-	-	-	-	-	-	-	-	-	-	-

*All Generac industrial alternators utilize Class H insulation materials. Standard alternator provides less than or equal to Class B temperature rise. Upsize 1 provides less than or equal to Class B temperature rise. Upsize 2 provides less than or equal

FUEL

Fuel Consumption Rates

Fuel Pump Lift - in (m)

36(.9)

STANDBY

Percent Load	gph	lph
25%	1.52	5.75
50%	3.33	8.82
75%	3.08	11.65
100%	4.16	15.7

COOLING

Coolant System Capacity - Gal (L)

4.5 (17.44)

Maximum Radiator Backpressure

1.5" H₂O Column

STANDBY

Coolant Flow per Minute	gpm (lpm)	37.7(123.8)
Heat rejection to Coolant	BTU/min	123,000
Inlet Air	cfm (m ³ /min)	6,360 (180.0)
Max. Operating Radiator Air Temp	°F (°C)	122(50)
Max. Operating Ambient Temperature	°F (°C)	122(50)

COMBUSTION AIR REQUIREMENTS

Intake Flow at Rated Power

STANDBY	
cfm (m ³ /min)	247 (7.00)

EXHAUST

Exhaust Outlet Size (Open Set)

3.0"

Maximum Backpressure (Post-Silencer)

1.5" Hg

STANDBY

Exhaust Flow (Rated Output)	cfm (m ³ /hr)	534(906.7)
Maximum Backpressure	in Hg (kPa)	1.5(10.1)
Exhaust Temp (Rated Output)	°F (°C)	930(498.8)

ENGINE

STANDBY

Rated Engine Speed	rpm	1800
Rated power at Rated kW	hp	93
Temperature Deration		Consult Factory
Altitude Deration		Consult Factory

* CA units include aftertreatment

Deration - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SD050

standard features and options

GENERATOR SET



● Genset Vibration Isolation	Std
● Factory Testing	Std
● Extended warranty	Std
● Padlockable Doors	Std
● Steel Enclosure (Enclosed Models)	Std
○ Remote Emergency Shutdown	Opt

ENGINE SYSTEM



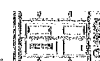
General	
● Oil Drain Extension	Std
● Air Cleaner	Std
● Industrial Exhaust Silencer (Open Sets, ship loose)	Std
● Critical Exhaust Silencer (Enclosed Sets)	Std
● Stainless steel flexible exhaust connection	Std
Fuel System	
● Primary Fuel Filter with Water Separator	Std
● Flexible Fuel Lines	Std
● UL142 Fuel Tank, 48 Hr Runtime	Std
● 2 Gal Overflow Containment with Alarm	Std
Cooling System	
● 120VAC Coolant Heater (3-wire connection cord)	Std
● 50%/50% Coolant	Std
● Level 1 Guarding (Open Sets)	Std
● Closed Coolant Recovery System	Std
● UV/Ozone resistant hoses	Std
● Factory-Installed Radiator	Std
● Radiator Drain Extension	Std
● Fan guard	Std
● Radiator duct adapter (Open Sets)	Std
Engine Electrical System	
● Battery charging alternator	Std
● Battery cables	Std
● Battery tray	Std
● 75W 120VAC Battery heater	Std
● Solenoid activated starter motor	Std
● 10A UL float/equalize battery charger	Std
● Weather Resistant electrical connections	Std
● Duplex GFCI Convenience Outlet	Std

ALTERNATOR SYSTEM



● UL2200 GENprotect™	Std
● 100% Rated 200A Main Line Circuit Breaker	Std

CONTROL SYSTEM



Control Panel	
● Digital H Control Panel - Dual 4x20 Display	Std
● Programmable Crank Limiter	Std
● 7-Day Programmable Exerciser (requires H-Transfer Switch)	Std
● Special Applications Programmable PLC	Std
● RS-232	Std
● RS-485	Std
● All-Phase Sensing DVR	Std
● Full System Status	Std
● Utility Monitoring (Req. H-Transfer Switch)	Std
● 2-Wire Start Compatible	Std
● Power Output (kW)	Std
● Power Factor	Std
● Reactive Power	Std
● All phase AC Voltage	Std
● All phase Currents	Std
● Oil Pressure	Std
● Coolant Temperature	Std
● Coolant Level	Std
● Low Fuel Pressure Indication	Std
● Engine Speed	Std
● Battery Voltage	Std
● Frequency	Std
● Date/Time Fault History (Event Log)	Std
● UL2200 GENprotect™	Std
○ Low-Speed Exercise	Opt
● Isochronous Governor Control	Std
● -40deg C - 70deg C Operation	Std
● Weather Resistant Electrical Connections	Std
● Audible Alarms and Shutdowns	Std
● Not in Auto (Flashing Light)	Std
● On/Off/Manual Switch	Std
● E-Stop (Red Mushroom-Type)	Std
● Remote E-Stop (Break Glass-Type, Surface Mount)	-
● Remote E-Stop (Red Mushroom-Type, Surface Mount)	-
● Remote E-Stop (Red Mushroom-Type, Flush Mount)	-
● NFPA 110 Level I and II (Programmable)	Std
● Remote Communication - RS232	Std

Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)

● Low Fuel	Std
● Oil Pressure (Pre-programmed Low Pressure Shutdown)	Std
● Coolant Temperature (Pre-programmed High Temp Shutdo	Std
● Coolant Level (Pre-programmed Low Level Shutdown)	Std
● Engine Speed (Pre-programmed Overspeed Shutdown)	Std
● Voltage (Pre-programmed Overvoltage Shutdown)	Std
● Battery Voltage	Std

Other Options

● Single Side Service	
○	

dimensions, weights and sound levels

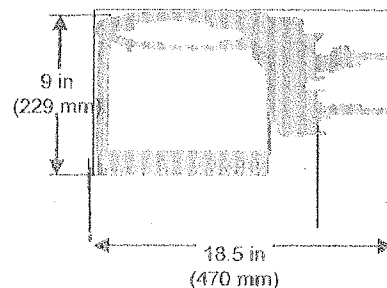
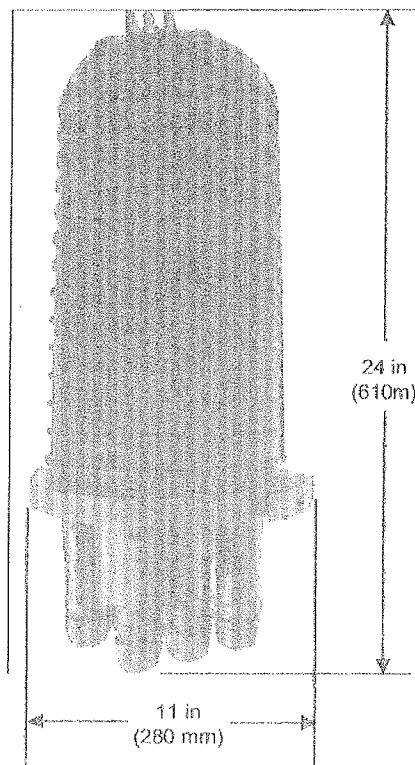
DC6-48-60-18-8F

DC Surge Suppression Solution

The DC6-48-60-18-8F is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in an IP 68 rated, waterproof enclosure.

FEATURES

- Protects up to 6 Remote Radio Heads, each with its own protection circuit.
- Flexible design allows for installation at the top of a tower for Remote Radio Head protection.
- Includes fiber connections for up to 18 pairs of fiber.
- LED indicators on individual circuits provide visual indication of suppressor status.
- Form 'C' relays allow for remote monitoring of the suppressor status.
- Patented Strikesorb technology provides over 60 kA of surge current capacity per circuit.
- Strikesorb suppression modules are fully recognized to UL 1449-3rd Edition Safety Standard, meeting all intermediate and high current fault requirements to facilitate use in OEM applications.
- Raycap recommends that DC protection system be installed within 2 meters or 6 feet of the radio.
- Dome design is lightweight and aerodynamic providing maximum flexibility for installation on top of towers.
- **Patent pending**



US: Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466

Europe: Tel +30 210 6152 000 Fax +30 210 6196 002

www.raycapsurgeprotection.com

DC6-48-60-18-8F

DC Power Surge Protection

Electrical Specifications	
Model Number	DC6-48-60-18-8F ^A
Nominal Operating Voltage	48 VDC
Nominal Discharge Current (I_n)	20 kA 8/20 μ s
Maximum Discharge Current (I_{max}) per NEMA LS-1	60 kA 8/20 μ s
Maximum Continuous Operating Voltage (U_o)	75 VDC
Voltage Protection Rating	400 V

^AModule Assembly Part # - DC6-48-60-18-8F-U. Field upgradable, prewired module package for 1 remote radio.

Mechanical Specifications	
Suppression Connection Method	Compression lug, #2-#14 AWG Copper, #2-#12 Aluminum
Fiber Connection Method	LC-LC Single mode duplex
Environmental Rating	IP 68, 7m 72hrs
Operating Temperature	-40° C to +80° C
Storage Temperature	-70° C to +80° C
Cold Temperature Cycling	IEC 61300-2-22e -30° C to +60° C 200 hrs @ 5 psi
Resistance to Aggressive Materials	CEI IEC 61073-2 including acids and bases
UV Protection	ISO 4892-2 Method A Xenon-Arc 2160 hrs

WEIGHT

System: 18.9 lbs (84.07 N)

Mount : 13.9 lbs (57.38 N)

Total: 32.8 lbs (141.45 N)

Stand-alone Module Assembly: 1 lb (4.45 N)

COMBINED WIND LOADING

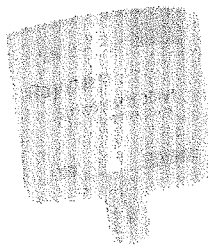
150mph (sustained) : 105.7 lbs (470 N)

195mph (gust): 213.6 lbs (950 N)

STANDARDS

Strikesorb modules are compliant to the following
Surge Protection Device (SPD) Standards:

- ANSI/UL 1449 - 3rd Edition
- IEEE C62.41
- NEMA LS-1, IEC 61643-1:2005 2nd Edition:2005
- IEC 61643-12
- EN 61643-11:2002 (including A11:2007)



GS-07F-0435V



Certified to
ISO 9001:2000



TUV Rheinland
of North America



G02-00-068 REV 070710

US: Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466

Europe: Tel +30 210 6152.000 Fax +30 210 6196 002

www.raycapsurgeprotection.com

www.tuv-rs.com

SECTION 8



APPROX. TRUE NORTH

MAP SYMBOL LEGEND



SUBJECT SITE LOCATION



PHOTO LOCATION NUMBER

KEY MAP OF PHOTOS

SITE NO: MA1433S

SITE NAME: WAREHAM ZECCO MARINE

ADDRESS: LOWER MAIN STREET
WAREHAM, MA

PREPARED BY:

EGADVANCED
ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
SUITE 200
ROXBURY, MA 02119
TEL: (617) 533-6364
FAX: (617) 533-6364

PREPARED FOR:

at&t
550 COCHITUATE ROAD, SUITE 13,
Framingham, MA 01701-4681



16 CHESTNUT STREET, FIDELITY, MA 02035


PAGE: PS-1

DATE: 12/3/2013

DRAWN BY: MR



REVISION: 0



PREPARED FOR:	at&t 550 CORCORATE ROAD, SUITE 13, FRAMINGHAM, MA 01701-4681	PREPARED BY:	 EG ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 1000 ROUTE 1 EAST PROVIDENCE, RI 02914 PH: (401) 584-2403 FAX: (401) 633-6354
TOWER RESOURCE MANAGEMENT 16 CHESTNUT STREET, FROBODURCH, MA 02035		SITE NO: MA1433S SITE NAME: WAREHAM ZECCO MARINE ADDRESS: LOWER MAIN STREET WAREHAM, MA	
		VIEW #1 EXISTING VIEW FROM THE NORTH, ON WARR AVENUE	
		PAGE: VA-2	DATE: 12/3/2013
		DRAWN BY: MR	
		REVISION: 0	



PROPOSED 100'
MONOPOLE

PREPARED FOR:  550 COCHINWAT ROAD, SUITE 13, FRAMINGHAM, MA 01701-4881	PREPARED BY:  EGADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 500 NORTH BROADWAY EAST PROVIDENCE, 02914 PH: (401) 334-2403 FAX: (401) 633-6304	SITE NO: MA1433S SITE NAME: WAREHAM ZECCO MARINE ADDRESS: LOWER MAIN STREET WAREHAM, MA	<div> <div>VIEW #1</div> <div>PROPOSED VIEW FROM THE NORTH, ON WARR AVENUE</div> </div> <div> <div>PAGE: VA-3</div> <div>DATE: 12/3/2013</div> <div>DRAWN BY: MR</div> <div>REVISION: 0</div> </div>
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TRM
 CONSULTING SERVICES, LLC
 TOWNSHIP RESOURCE MANAGEMENT
 16 CHESTNUT STREET, FROBDOUGH, MA 02035



PREPARED FOR:



550 COCHITuate ROAD, SUITE 13,
Framingham, MA 01701-4881



TOWER RESOURCE MANAGEMENT
18 CHESTNUT STREET, FROBODURGH, MA 02035

PREPARED BY:



Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
Framingham, MA 01701-4881
PH: (508) 875-6343
FAX: (508) 875-6354

SITE NO: MA1433S

SITE NAME: WAREHAM ZECCO MARINE

ADDRESS: LOWER MAIN STREET
WAREHAM, MA

VIEW #2
EXISTING VIEW FROM THE
NORTH, ON NARROWS ROAD



PAGE: VA-4

DATE: 12/3/2013

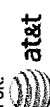

DRAWN BY: MR


REVISION: 0



PREPARED FOR:  550 COCKSHUTE ROAD, SUITE 13, FROTHINGHAM, MA 01701-4881	PREPARED BY:  EGADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 500 NORTH BROADWAY 2ND FLOOR, SUITE 200 FROTHINGHAM, MA 01701-4881 FAX: (401) 333-6354	SITE NO: MA1433S SITE NAME: WAREHAM ZECCO MARINE ADDRESS: LOWER MAIN STREET WAREHAM, MA	VIEW #2 PROPOSED VIEW FROM THE NORTH, ON NARROWS ROAD	TOWNS RESOURCE MANAGEMENT 16 CHESTNUT STREET, FROTHINGHAM, MA 02035	DATE: 12/3/2013 DRAWN BY: MR	PAGE: VA-5 REVISION: 0
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PREPARED FOR:  550 CORNHILL ROAD, SUITE 13, FRAMINGHAM, MA 01701-4581	PREPARED BY:  EG ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 550 CORNHILL ROAD, SUITE 13 FRAMINGHAM, MA 01701-4581 PH: (401) 554-2403 FAX: (401) 554-6354	SITE NO: MA1433S SITE NAME: WAREHAM ZECCO MARINE ADDRESS: LOWER MAIN STREET WAREHAM, MA	VIEW #3 EXISTING VIEW FROM THE SOUTHEAST, ON OAK STREET	PAGE: VA-6 DATE: 12/3/2013 DRAWN BY: MR REVISION: 0
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TRM
 COMMUNICATIONS NETWORK SOLUTIONS
 16 CHESTNUT STREET, FIDBOROUGH, MA 02035



PROPOSED 100' MONOPOLE

<p>PREPARED FOR:</p> <p> at&t</p> <p>550 OCEANVIEW ROAD, SUITE 13, FARMERSVILLE, VA 01701-4681</p>	<p>PREPARED BY:</p> <p> EG ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications</p> <p>500 NORTH BROADWAY SUITE 200 PH: (401) 354-2403 FAX: (401) 633-6354</p>	<p>SITE NO: MA1433S</p> <p>SITE NAME: WAREHAM ZECCO MARINE</p> <p>ADDRESS: LOWER MAIN STREET WAREHAM, MA</p>	<p>VIEW #3</p> <p>PROPOSED VIEW FROM THE SOUTHEAST, ON OAK STREET</p>	<p>PAGE: VA-7</p> <p>DATE: 12/3/2013</p> <p>DRAWN BY: MR</p> <p>REVISION: 0</p>
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 **TRM**
Tower Resource Management
116 CHESTNUT STREET, FARMERSVILLE, VA 02035

SECTION 9

OK 171196263

15718
Received & Recorded
PLYMOUTH COUNTY
REGISTRY OF DEEDS
03 FEB 1999 03:00PM
RICHARD C. SEIBERT
REGISTER
OK 17119 Pg 243

D E E D

WARR'S MARINE INC., a corporation duly established under the laws of the Commonwealth of Massachusetts, and having its usual place of business on Lower Main Street, Wareham, Plymouth County, Massachusetts, in consideration of ONE MILLION SIX HUNDRED THOUSAND and NO/100 DOLLARS (\$1,600,000.00) grants to ZRCCO MARINE, LLC, a Massachusetts limited liability corporation, and having its usual place of business at 40 Pine Tree Drive, Buzzards Bay, Barnstable County, Massachusetts with QUITCLAIM COVENANTS

all its right, title and interest in and to the following real estate:

The land, buildings and piers in Wareham, Plymouth County, Massachusetts containing 14.54 acres more or less, and being situated Northerly and Westerly of the Wareham River, and Southerly and Easterly of Warr Avenue, as shown on a plan entitled "Plan of Land Prepared for Warr's Marine Inc., Warr Avenue, Wareham, Mass., September 22, 1976, Scale 1" = 60', Robert A. Braman, Civil Engineer & Surveyor, Wareham, Mass." to be recorded herewith, and being more particularly bounded and described as follows:

Beginning at a concrete bound in the Southerly sideline of Warr Avenue, said concrete bound being situated North 69° 28' 00" East, Thirty and 04/100 (30.04) feet from a concrete bound on the Northeasterly corner of Lot 14, as shown on said plan;

- THENCE in the Southerly sideline of Warr Avenue, North 69° 28' 00" East, Five Hundred Fifty-Three and 23/100 (553.23) feet to the Northwestern corner of land of Ivan G. and Jennie N. Easton;
- THENCE in line of said Easton land, South 20° 49' 52" East, One Hundred Eighty and No/100 (180.0) feet to a concrete bound;
- THENCE again in line of said Easton land, North 72° 58' 58" East, One Hundred Two and 22/100 (102.22) feet to a concrete bound;
- THENCE again in line of said Easton land, North 18° 06' 58" East, Twenty-Four and 09/100 (24.89) feet to a concrete bound;
- THENCE again in line of Easton land North 21° 51' 50" West, One Hundred Sixty and 11/100 (160.11) feet to a concrete bound;
- THENCE in the Southerly sideline of Warr Avenue, North 72° 57' 25" East, Thirty-One and 27/100 (31.27) feet to a concrete bound;

Plan
19/136
see sh.

- THENCE South 27° 19' 21" East Fifteen and 84/100 (15.84) feet to a stone bound; said stone bound being the Southwesterly corner of land of the A. D. Makepeace Company;
- THENCE in line of said Makepeace land, North 67° 33' 51" East, Two Hundred Eight and 04/100 (208.04) feet to a stone bound;
- THENCE again in line of said Makepeace land, North 67° 33' 51" East, Twenty-Four and No/100 (24.0) feet more or less to the Wareham River;
- THENCE Southerly and Westerly by the Wareham River, One Thousand Six Hundred Ninety-Five and No/100 (1695.0) feet more or less to the Northerly line of Pinehurst Drive;
- THENCE in said Northerly sideline of Pinehurst Drive, South 72° 28' 26" West, Thirty and No/100 (30.0) feet more or less to a concrete bound;
- THENCE continuing in said Northerly sideline of Pinehurst Drive, South 72° 28' 26" West, Two Hundred Twenty-Seven and 44/100 (227.44) feet to a concrete bound, said bound being in the Easterly sideline of Wankinco Avenue;
- THENCE in said Easterly sideline of Wankinco Avenue, North 17° 29' 44" West, Two Hundred Thirty and 04/100 (230.04) feet to a drill hole in a rock, said point being in the Northerly sideline of Fourth Street;
- THENCE along said Northerly sideline of Fourth Street, South 72° 30' 16" West, Seventy-One and 12/100 (71.12) feet to a concrete bound, said concrete bound being the Southeasterly corner of Lot 1, as shown on Plan #5 of Highland Shores;
- THENCE in the Easterly line of Lots 1 through 8, as shown on said plan, North 17° 29' 44" West, Five Hundred Twenty and No/100 (520.0) feet to a drill hole in a rock;
- THENCE in line of Lot 9, North 72° 30' 16" East, Fifteen and No/100 (15.0) feet to a concrete bound in the Southerly and Westerly line of Wankinco Avenue;
- THENCE in the Southerly end of Wankinco Avenue, North 72° 30' 16" East, Thirty and No/100 (30.0) feet to a concrete bound;
- THENCE in the Easterly sideline of Wankinco Avenue, North 17° 29' 44" West, Four Hundred Twenty-Six and 78/100 (426.78) feet to the point of beginning.

HK 17119PG245

Excepting that portion of the premises shown as Lot D on a plan entitled "Division of Land Prepared for Warr's Marine, Inc., Warr Avenue, Wareham, Mass.", recorded in Plymouth County Registry of Deeds, Plan Book 20, Page 513, however the same may be bounded and described thereon. *and the premises and rights conveyed to Ivan G. Easton, et ux by deed dated April 9, 1979 and recorded at said registry in Book 4645, Page 220. Subject to rights as shown on the plan first referred to.

Together with all rights, privileges and easements connected therewith and subject to restrictions and easements of record and are hereby conveyed subject to any building and zoning law requirements which may be in force and applicable.

a portion of Being the same premises conveyed to Warr's Marine Inc. by Deed of William E. C. Warr, Jr. dated September 10, 1976 and recorded in the Plymouth County Registry of Deeds, Book 4214, Page 97.

IN WITNESS WHEREOF, the said WARR'S MARINE INC. has caused its corporate seal to be hereto affixed and these presents to be signed, acknowledged and delivered in its name and behalf by William E. C. Warr, III, its President, and David J. Warr, its Treasurer, hereto duly authorized this 3 day of February, 1999.

WARR'S MARINE INC.

By: William E. C. Warr, III
William E. C. Warr, III, President

By: David J. Warr
David J. Warr, Treasurer

THE COMMONWEALTH OF MASSACHUSETTS

PLYMOUTH, ss:

February 3, 1999

Then personally appeared the above-named WILLIAM E. C. WARR, III, and acknowledged the foregoing instrument to be the free act and deed of WARR'S MARINE INC., before me.

Leonard M. Bello
Notary Public

My Commission Expires: 11-25-99

Leonard M. Bello

THE COMMONWEALTH OF MASSACHUSETTS

PLYMOUTH, ss:

February 3, 1999

Then personally appeared the above-named DAVID J. WARR and acknowledged the foregoing instrument to be the free act and deed of WARR'S MARINE INC., before me.

Leonard M. Bello
Notary Public

My Commission Expires: 11-25-99

END OF INSTRUMENT

867A000 14141
EXCISE TAX

TAX 7296.00
CHECK 7296.00

CANCELLED

DEEDS REG 18
PLYMOUTH

SECTION 10

SECTION 11

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) ZCCO MARINE LLC MAP & LOT: 46/1002 DATE: 12-6-2013

Assessors Information			Town of Wareham, MA	
Parcel Number			Abutters List	
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		1003	BULLSEYE ASSOCIATES LTD	C/O LINDA EASTON FOSTER
46		1010	BRITISH LANDING DEVELOPMENT CO	55 PYA ROAD, PORTLAND, ME 04103
46		D	Bullseye Associates LTD	C/O CHESTNUT HILL REALTY PO BOX 396 CHESTNUT HILL, MA 02167
46		C	LOWER MAIN REALTY TRUST	55 PYA Rd, Portland, ME 04103
46		B	JENNIFER J. ZECCO	C/O PATRICK ANTHONY ZECCO TRUSTEE 2 WARR AVE, WAREHAM, MA 02571
46		W-11	PATRICK S. ROBLES	40 PINE TREE DR, BUZZARDS BAY MA 02532
46		W-9	STEVEN E. DEES	5 WARR AVE, WAREHAM, MA 02571
46		W-7	NEIC A. POTTER & HARENS	9 WARR AVE, WAREHAM, MA 02571
46		W-3	JOHN CONNOLLY JR & LAURIE J.	288 CONVERSE RD, MARION, MA 02738
46		W-4B	PAULA E. MURPHY	23 WARR AVE, WAREHAM, MA 02571
46		W-2B	JOHN CONNOLLY JR & LAURIE J.	18 WARR AVE, WAREHAM, MA 02571
46		W-1	TIMOTHY O. DALTON	23 WARR AVE, WAREHAM, MA 02571
			+Rhonda L.	

Certification of Ownership &

Mailing Address ONLY NOT

PROXIMITY. As of 1-1-13

R. E. Marston
ASSESSORS OFFICE

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) Zocco MARINE LLC

DATE: 12-6-2013

MAP & LOT: 46/1002

Assessors Information			Town of Wareham, MA	
Parcel Number			Abutters List	
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		H-14	CHARLES J. DONOHUE + Judith	30 WARR AVE, WAREHAM MA 02571
46		H-13	" "	" "
46		H-11	DONALD L & JUNE C TRUNTS	STRUNK NUMBER TRUST
46		H-9	WILLIAM E C + DARYL B. GREGORY AYLMEH TRUSTEE OF	36 WARR AVE, WAREHAM MA 02571
46		H-8	THE LIMERICK WATER RIGHTS	40 WARR AVE, WAREHAM MA 02571
46		H-4	ROBERT L BROWN + Nancy E.	1701 Hermann DR, UNIT 1304, HOUSTON TX 77004
46		H-7	SUSAN C FLINT	50 WARR AVE, WAREHAM, MA 02571
46		H-6	MARC E TOWER	44 WARR AVE, WAREHAM, MA 02571
46		H-3	+ James F. Rafferty FRANCIS E DALEY	3 CANNONBERRY WAY, WAREHAM, MA 02571
46		H-1	KATHRYN G. ROUNSVILLE	345 BEDFORD ST, CARBUILLER MA 02347
46		BL-101	CLARE C BENCO	56 WARR AVE, WAREHAM, MA 02571
46		BL-102	MA HOUSING FINANCE AGENCY	C/O ONORATO, CLARE 53 MAIN ST #101, WAREHAM MA 02571
Certification of Ownership & Mailing Address ONLY, NOT PROXIMITY. As of 1-1-			ONE BEACON ST, BOSTON, MA 02108	

ASSESSORS OFFICE

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) ZCCCO MARINE LLC

DATE: 12-6-2013

MAP & LOT: 46/1002

Town of Wareham, MA
Abutters List

Assessors Information Parcel Number		Property Owner's Name (s)		Mailing Address	
Map	Block	Lot(s)			
46		BL-103	JAMES D. COLLINS & DAVID R. HALL	207 COACHMAN CANE, W. BARNSTABLE	MA 02668
46		BL-104	ANTHONY ASARO + SUSAN P.	688 MAIN ST, WAREHAM,	MA 02571
46		BL-105	KATHERINE P. MACWILLIAM	C/O FEDERAL HOME LOAN MTG. CO. CARLTON TX	500 PLANO PL
46		BL-106	KENNETH DONG	CHRISTINA M WONG DONG TRUSTEES	75010
46		BL-107	DONALD S. MCKINLAY	1501 CENTRE ST, NEWTON HIGHLANDS	MA 02461
46		BL-108	RAUPH L. DLOUTHY JR	FRANCIS M. MCKINLAY TRUSTEES - 621 MAIN ST	WAREHAM, MA 02571
46		BL-109	GERARD KELLY	+ ELLEN M. RUSSELL	WAREHAM, MA 02571
46		BL-110	KEVIN Y K TSANG	53A MAIN ST UNIT 108, WAREHAM,	MA 02571
46		BL-111	WILLIAM DUNN	2 CIRCLE LN, POCASSETT, MA	02559
46		BL-112	Rose Lopez Trustee	5 HEATH RD, MILTON MA	02186
46		BL-113	BEVERLY C & WILLIAM P HART	45 MAIN ST, UNIT 111, WAREHAM, MA	02571
46		BL-114	ANN KEATING TRUSTEES OF	45 Main St unit 112 Wareham, MA	02571

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ASSESSORS OFFICE

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) ZCCCO MARINE LLC

DATE: 12-6-2013

MAP & LOT: 46/1002

Assessors Information
Parcel Number

Town of Wareham, MA
Abutters List

Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		BL 115	GARY JONAITIS + Laura	169 MYSON RD, JEFFERSON, MA 01522
46		BL 116	+ Carol A ORRIN ANDERSON	53 MAIN ST, UNIT 16, WAREHAM, MA 02571
46		BL 117	RUDOLPH + MARION R. SANTOS	45 MAIN ST, UNIT 117, WAREHAM, MA 02571
46		BL 118	MARK P. FOX + Eugenia W.	19 BOUGAINVILLEA AVE, KEY WEST FL 33040
46		BL 201	TALIA CEE TRINGALK	45 MAIN ST UNIT 201, WAREHAM, MA 02571
46		BL 202	LARA L FERREIRA	45 MAIN ST UNIT 202, WAREHAM, MA 02571
46		BL 203	SCOTT C. SMITH	45 MAIN ST, UNIT 203, WAREHAM, MA 02571
46		BL 204	CRAIG C BURNES	45 MAIN ST, UNIT 204, WAREHAM MA 02571
46		BL 205	SHERYL SEYFERT	4417 DAVISVILLE ROAD, B. FALMOUTH MA 02536
46		BL 206	HEINZ K MUEHLHANN + Leah B.	100 RAFFAELLE DR, WALTHAM, MA 02452
46		BL 207	CHARLES F. CALLAN JR	PO Box 3594, PLYMOUTH MA 02360
46		BL 208	ELIZABETH SIMMONS	PO BOX 1383, MARSHFIELD, MA 02050

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OWNERS NAME (S) ZECO MARINE LLC

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46		BL 204	+ Russell J. Yule TINA M. DEANGELIS	45 MAIN ST, UNIT 209, WAREHAM MA 02571
46		BL 21	+ Sally A RAYMOND M. KODZIS	15 IRONWOOD LANE, MILLIS MA 02054
46		BL 216	CYNTHIA JOHANSON	45 MAIN ST, UNIT 210, WAREHAM MA 02571
46		BL 211	+ Alice A. Fernandes BURT D PINA	58 BULLIVANT FARM RD, MARION MA 02738
46		BL 212	BAUM & SCHEUB MANAGEMENT LLC	10 PETER COOPER DR, WAREHAM MA 02571
46		BL 213	NANCY A. PURPURA	53 MAIN ST, UNIT 213, WAREHAM MA 02571
46		BL 214	+ Pamela G. LOUIS POLLUCCI	69 PRATTS COURT, STAGHTON MA 02072
46		BL 215	TIMOTHY SPIRIANO	20 CHILDS ROAD, LEXINGTON, MA 02421
46		BL 216	ARLENE A FIOALGO	45 MAIN ST, UNIT 216, WAREHAM MA 02571
46		BL 217	+ Mary Anne KEITH D. BOMBARDI	81 CLOWES DR, FALMOUTH MA 02540
46		BL 218	JOHN C. NEWBURN	53 MAIN ST, UNIT 218, WAREHAM MA 02571
46		BL 219	NAOMI SHAW	45 MAIN ST, UNIT 219, WAREHAM MA 02571

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SUBJECT PROPERTY: 2 WARE AVENUE

DATE: 12-6-2013

OWNERS NAME (S) ZACCARONE LLC

MAP & LOT: 46 / 1002

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Parcel Number			Abutters List	
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		BL-27	ROBERT T CONIO	35 JOANNE RD, SToughton MA 02072
46		BL-220	CHRISTOPHER H. SPRANO	PO BOX 713, CARLISLE MA 01741
46		BL-221	JOSEPH E. + JUDITH E. ALBERG	45 MAIN ST, UNIT 221, WAREHAM MA 02571
46		BL-222	+ ELENA ANN PAUL J. COFFEY	53 MAIN ST, UNIT 222, WAREHAM MA 02571
46		BL-223	PROPERTY MANAGEMENT SERVICES 208 VESTAVIA CIR + BRIGETTE W. LLC	WAREHAM, MA 02571
46		BL-224	KARL H. MUEHLMANN	100 RAFFAEL DR, WALTHAM, MA 02452
46		BL-223	MICHAEL A FITZGERALD TRUST	OF SPINNO REALTY TRUST 12 WIDOWS COVE LANE, WAREHAM, MA 02571
46		BL-24	PAUL M. PASTERNAK	103 OCEAN HILL DR, KINGSTON, MA 02364
46		BL-25	DEBORAH J LEE	45 MAIN ST, UNIT 25, WAREHAM, MA 02571
46		BL-26	JAMES S BUNTON	45 MAIN ST, UNIT 26, WAREHAM, MA 02571
46		BL-27	ZACCA MARINE LLC	2 WARE AVE, WAREHAM MA 02571
46		BL-301	ROBERT A McOUFFY	53 MAIN ST, UNIT 301, WAREHAM, MA 02571

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SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) Zocco MARINE LLC

DATE: 12-6-2013

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Assessors Information			Town of Wareham, MA	
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		BL-302	THOMAS J. KONCIUS + LAUREN E.	23 BORDER ST, COHASSET MA 02025
46		BL-31	KATHLEEN YULE + Russe II	36 WEBBIT COURT, RAYNHAM MA 02767
46		BL-32	GREGORY CHU	26 STUART RD, ROCHESTER MA 02770
46		BL-33	JAMES M. KILBELA	45 MAIN ST, UNIT 33, WAREHAM MA 02571
46		BL-34	FREDERICK & LISA DONOVAN	C/O LISA DONOVAN 45 MAIN ST, UNIT 34, WAREHAM MA 02571
46		BL-35	MARCO CARNEY	45 MAIN ST, UNIT 35, WAREHAM MA 02571
46		BL-36	BRIAN P. KINGSTON	45 MAIN ST, UNIT 36, WAREHAM MA 02571
46		BL-37	ROBERT D. HANLEY + SANDRA R.	71 OLD FIELDS ROAD, SANDWICH, MA 0256
46		BL-C1	FIVE H. LIMITED PARTNERSHIP	PO Box 1789 SAGAMORE BEACH, MA 02562
46		BL-38	JAMES E BRUCE TRUST	JAMES E BRUCE DEC TRUST 2009, MA 02562 PO Box 3142, WAREHAM, MA 02571
46		BL-39	KEITH B. AARSTHEIM	45 MAIN ST, UNIT 39, WAREHAM MA 02571
46		BL-C2	FIVE H LIMITED PARTNERSHIP	PO Box 1789, SAGAMORE BEACH, MA 02562

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OWNERS NAME (S) Zocco MARINE LLC

DATE: 12-6-2013

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Town of Wareham, MA
Abutters List

Assessors Information Parcel Number		Property Owner's Name (s)		Mailing Address
Map	Block	Lot(s)		
46		BL-C3	TRIO WINIZ COMPANY INC	7 Wolf Hill, E. SANOVICH MA 02537
46		BL-C4	MARINA SIDE LLC	PO BOX 1750073, ARLINGTON, MA 02475
46		BL-C5	FIVE H LIMITED PARTNERSHIP	PO BOX 1789, SAGAMORE BEACH, MA 02562
46		BL-C6	BRIAN C. FOOTE	PO BOX 388, WAREHAM MA 02571
47		1124	JEFFREY D. BAKER TRUSTEE	WAREHAM RIVER REALTY TRUST C/O INTECH INC
46A2		198	WILLIAM G C WARR III	979 MAIN ST ACTON, MA 01720
46A2		197	VIRGINIA L COELHO	40 WARR AVE, WAREHAM, MA 02571
46A2		I	+ JANICE F O'CONNELL RONALD L LACHANCE	4 JENNIFER RD, LOWELL MA 01854
46A2		165	ELAINE V FORTNEY	49 BIRCH ST, PLYMOUTH, MA 02360
46A2		166	PATRICIA GALLAGHER	74 PHEASANT HILL RD, MARLBOROUGH MA 01752
46A2		164B	ORIAN T KELLY+ANN F.	8 PINEHURST DR, WAREHAM MA 02571
46A2		142	PAUL J DONOVAN	85 CANTON TERRACE, WESTYKOO MA 02090
				62 MYRTLE ST, MILLS MA 02054

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DATE: 12-6-2013

MAP & LOT: 46/1002

Assessors Information			Town of Wareham, MA	
Parcel Number	Abutters List			
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		1003	BULLSEYE ASSOCIATES LTD	C/O LINDA EASTON FOSTER
46		1010	BRITISH LANDING DEVELOPMENT CO	55 PYA ROAD, PORTLAND, ME 04103
46		D	Bullseye Associates LTD	C/O CHESTNUT HILL REALTY PO BOX 396 CHESTNUT HILL, MA 02167
46		C	LOWER MAIN REALTY TRUST	55 PYA Rd, Portland, ME 04103
46		B	JENNIFER J. ZECCO	C/O PATRICK ANTHONY ZECCO TRUSTEE 2 WARR AVE, WARREN, MA 02571
46		W-11	PATRICK S. ROBLES	40 PINE TREE DR, BUZZARDS BAY MA 02532
46		W-9	STEVEN E. DEES	5 WARR AVE, WARREN, MA 02571
46		W-7	NEIC A. POTTER & HARENS	9 WARR AVE, WARREN, MA 02571
46		W-3	JOHN CONNOLLY JR & LAURIE J.	288 CONVERSE RD, MARION, MA 02738
46		W-4B	PAULA E. MURPHY	23 WARR AVE, WARREN, MA 02571
46		W-2B	JOHN CONNOLLY JR & LAURIE J.	18 WARR AVE, WARREN, MA 02571
46		W-1	TIMOTHY O. DALTON	23 WARR AVE, WARREN, MA 02571
			+Rhonda L.	

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D. E. Marston

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Pg. 1

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) Zocco MARINE LLC DATE: 12-6-2013
 MAP & LOT: 46/1002

Assessors Information			Town of Wareham, MA	
Parcel Number			Abutters List	
Map	Block	Lot(s)	Property Owner's Name (s)	Mailing Address
46		H-14	CHARLES J. DONOHUE + Judith	30 WARR AVE, WAREHAM MA 02571
46		H-13	" "	" "
46		H-11	DONALD L & JUNE C TRUNTS	STRUNK NUMBER TRUST
46		H-9	WILLIAM E C + DARYL B. GREGORY AYLMER TRUSTEE OF	36 WARR AVE, WAREHAM MA 02571
46		H-8	THE LIMERICK WATER RIGHTS	40 WARR AVE, WAREHAM MA 02571
46		H-4	ROBERT L BROWN + Nancy E. SO	1701 Hermann DR, UNIT 1304, HOUSTON TX 77004
46		H-7	SUSAN C FLINT	50 WARR AVE, WAREHAM, MA 02571
46		H-6	MARC E TOWER	44 WARR AVE, WAREHAM, MA 02571
46		H-3	+ James F. Rafferty FRANCIS E DALEY	3 CANNONBERRY WAY, WAREHAM, MA 02571
46		H-1	KATHRYN G. ROUNSVILLE	345 BEDFORD ST, CARBUILLER MA 02347
46		BL-101	CLARE C BENCO	56 WARR AVE, WAREHAM, MA 02571
46		BL-102	MA HOUSING FINANCE AGENCY	C/O ONORATO, CLARE 53 MAIN ST #101, WAREHAM MA 02571
Certification of Ownership & Mailing Address ONLY, NOT PROXIMITY. As of 1-1-			ONE BEACON ST, BOSTON, MA 02108	

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S)

ZCCO MARINE LLC

DATE: 12-6-2013

MAP & LOT: 46/1002

Assessors Information		Parcel Number		Town of Wareham, MA		Abutters List	
Map	Block	Lot(s)	Property Owner's Name (s)			Mailing Address	
46		BL-103	JAMES D. COLLINS & DAVID R. HALL			207 COACHMAN CANE, W. BARNSTABLE MA 02668	
46		BL-104	ANTHONY ASARO & SUSAN P.			688 MAIN ST, WAREHAM, MA 02571	
46		BL-105	KATHERINE P. MACWILLIAM			C/O FEDERAL HOME LOAN MTG. CO. 500 PLANO PL WAREHAM, MA 02571	
46		BL-106	KENNETH DONG			CHRISTINA M WONG DONG TRUSTEES 75010 1501 CENTRE ST, NEWTON HIGHLANDS MA 02461	
46		BL-107	DONALD S. MCKINLAY			FRANCIS M. MCKINLAY TRUSTEES - 621 MAIN ST + ELLEN M. RUSSELL WAREHAM, MA 02571	
46		BL-108	RALPH L. DLOUTHY JR			53A MAIN ST UNIT 108, WAREHAM, MA 02571	
46		BL-109	GERARD KELLY			2 Circle LN, POCASSETT, MA 02559	
46		BL-110	KEVIN Y K TSANG			5 Heather Dr, MILTON MA 02186	
46		BL-111	WILLIAM DUNN			45 MAIN ST, UNIT 111, WAREHAM, MA 02571	
46		BL-112	Rose Lopez Trustee			45 Main St unit 112 Wareham, MA 02571	
46		BL-113	BEVERLY C & WILLIAM P HART			PO Box 39 S. Yarmouth, MA 02664	
46		BL-114	ANN KEATING TRUSTEES OF			REACTY TRUST 12 CHAPEL ST, CANTON, MA 02021	

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Pg. 3

SUBJECT PROPERTY: 2 WARR AVENUE

OWNERS NAME (S) ZCCCO MARINE LLC

DATE: 12-6-2013

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Town of Wareham, MA
Abutters List

Assessors Information		Parcel Number		Property Owner's Name (s)		Mailing Address	
Map	Block	Lot(s)		Property Owner's Name (s)		Mailing Address	
46		BL 115		GARY JONAITIS + LAURA		169 MYSON RD, JEFFERSON, MA 01522	
46		BL 116		ORRIN ANDERSON + CAROL A		53 MAIN ST, UNIT 16, WAREHAM, MA 02571	
46		BL 117		RUDOLPH + MARION R. SANTOS		45 MAIN ST, UNIT 117, WAREHAM, MA 02571	
46		BL 118		MARK P. FOX + EUGENIA W.		19 BOUGAINVILLEA AVE, KEY WEST FL 33040	
46		BL 201		TALIA CEE TRINGAL		45 MAIN ST UNIT 201, WAREHAM, MA 02571	
46		BL 202		LARA L FERREIRA		45 MAIN ST UNIT 202, WAREHAM, MA 02571	
46		BL 203		SCOTT C. SMITH		45 MAIN ST, UNIT 203, WAREHAM, MA 02571	
46		BL 204		CRAIG C BURNES		45 MAIN ST, UNIT 204, WAREHAM MA 02571	
46		BL 205		SHERYL SEYFERT		4417 DAVISVILLE ROAD, B. FALMOUTH MA 02536	
46		BL 206		HEINZ K MUEHLHANN + LEAH B.		100 RAFFAELLE DR, WALTHAM, MA 02452	
46		BL 207		CHARLES F. CALLAN JR		PO BOX 3594, PLYMOUTH MA 02360	
46		BL 208		ELIZABETH SIMMONS		PO BOX 1383, MARSHFIELD, MA 02050	

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Parcel Number			Abutters List	
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46		BL 216	CYNTHIA JOHANSON	45 MAIN ST, UNIT 210, WAREHAM MA 02571
46		BL 211	+ Alice A. Fernandes BURT D PINA	58 BULLIVANT FARM RD, MARION MA 02738
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46		BL 214	+ Pamela G. LOUIS POLLUCCI	69 PRATTS COURT, STAGHTON MA 02072
46		BL 215	TIMOTHY SPIRIANO	20 CHILDS ROAD, LEXINGTON, MA 02421
46		BL 216	ARLENE A FIOALGO	45 MAIN ST, UNIT 216, WAREHAM MA 02571
46		BL 217	+ Mary Anne KEITH D. BOMBARDI	81 CLOWES DR, FALMOUTH MA 02540
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46		BL 219	NAOMI SHAW	45 MAIN ST, UNIT 219, WAREHAM MA 02571

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46		BL-221	JOSEPH E. + JUDITH E. ALBERG	45 MAIN ST, UNIT 221, WAREHAM MA 02571
46		BL-222	+ ELENA ANN PAUL J. COFFEY	53 MAIN ST, UNIT 222, WAREHAM MA 02571
46		BL-223	PROPERTY MANAGEMENT SERVICES 208 VESTAVIA CIR + BRIGETTE W. LLC	WAREHAM, MA 02571
46		BL-224	KARL H. MUEHLMANN	100 RAFFAEL DR, WALTHAM, MA 02452
46		BL-223	MICHAEL A FITZGERALD TRUST	OF SPINNO REALTY TRUST 12 WIDOWS COVE LANE, WAREHAM, MA 02571
46		BL-24	PAUL M. PASTERNAK	103 OCEAN HILL DR, KINGSTON, MA 02364
46		BL-25	DEBORAH J LEE	45 MAIN ST, UNIT 25, WAREHAM, MA 02571
46		BL-26	JAMES S BUNTON	45 MAIN ST, UNIT 26, WAREHAM, MA 02571
46		BL-27	ZACCO MARINE LLC	2 WARR AVE, WAREHAM MA 02571
46		BL-301	ROBERT A Mcduffy	53 MAIN ST, UNIT 301, WAREHAM, MA 02571

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46		BL-32	GREGORY CHU	26 STUART RD, ROCHESTER MA 02770
46		BL-33	JAMES M. KILBELA	45 MAIN ST, UNIT 33, WAREHAM MA 02571
46		BL-34	FREDERICK & LISA DONOVAN	C/O LISA DONOVAN 45 MAIN ST, UNIT 34, WAREHAM MA 02571
46		BL-35	MARCO CARNEY	45 MAIN ST, UNIT 35, WAREHAM MA 02571
46		BL-36	BRIAN P. KINGSTON	45 MAIN ST, UNIT 36, WAREHAM MA 02571
46		BL-37	ROBERT D. HANLEY + SANDRA R.	71 OLD FIELDS ROAD, SANDWICH, MA 0256
46		BL-C1	FIVE H. LIMITED PARTNERSHIP	PO Box 1789 SAGAMORE BEACH, MA 02562
46		BL-38	JAMES E BRUCE TRUST	JAMES E BRUCE DEC TRUST 2009, MA 02562 PO Box 3142, WAREHAM, MA 02571
46		BL-39	KEITH B. AARSTHEIM	45 MAIN ST, UNIT 39, WAREHAM MA 02571
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Town of Wareham, MA
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46		BL-C4	MARINA SIDE LLC	PO BOX 1750073, ARLINGTON, MA 02475
46		BL-C5	FIVE H LIMITED PARTNERSHIP	PO BOX 1789, SAGAMORE BEACH, MA 02562
46		BL-C6	BRIAN C. FOOTE	PO BOX 388, WAREHAM MA 02571
47		1124	JEFFREY D. BAKER TRUSTEE	WAREHAM RIVER REALTY TRUST C/O INTECH INC
46A2		198	WILLIAM G C WARR III	979 MAIN ST ACTON, MA 01720
46A2		197	VIRGINIA L COELHO	40 WARR AVE, WAREHAM, MA 02571
46A2		I	+ JANICE F O'CONNELL RONALD C LACHANCE	4 JENNIFER RD, LOWELL MA 01854
46A2		165	ELAINE V FORTNEY	49 BIRCH ST, PLYMOUTH, MA 02360
46A2		166	PATRICIA GALLAGHER	74 PHEASANT HILL RD, MARLBOROUGH MA 01752
46A2		164B	ORIAN T KELLY+ANN F.	8 PINEHURST DR, WAREHAM MA 02571
46A2		142	PAUL J DONOVAN	85 CANTON TERRACE, WESTYKOO MA 02090
				62 MYRTLE ST, MILLS MA 02054

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C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
Phone: (603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions



MA1433

(Wareham Zecco Marine)

2 Warr Avenue, Wareham, MA 02571

December 5, 2013

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the installation of AT&T antenna arrays on the proposed monopole tower, to be located at 2 Warr Avenue in Wareham, MA. The coordinates of the tower will be 41° 45' 6.0" N, 70° 42' 35.2" W.

AT&T is proposing the following installation:

- 1) Install twelve multi-band (700/850/1900/2300 MHz) antennas for their UMTS and LTE networks (four per sector).

This report uses the planned antenna configuration for AT&T¹ to derive the resulting % MPE of the final tower configuration, once the installation has been completed.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

¹ Based upon AT&T's preliminary RFDS dated December 2, 2013.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{EIRP}}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 2.0

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished installation.

The percent of MPE values presented in this report reflect levels that one may encounter from one sector of each carrier's antennas. Most carriers use 3 sectors per site with azimuths approximately 120 degrees apart, therefore one could not be standing in the main beam of all 3 sectors at the same time. In cases where downtilt and antenna models are not uniform across all 3 sectors, the downtilt and antenna model with the highest gain was used for the calculations. This results in a conservative or "worst case" assumption for percent of MPE calculations.

4. Proposed Antenna Inventory

Table 1 below outlines AT&T's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachment C.

Operator	Sector	Tx Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBd)	Power ERP (Watts)	Antenna Model	Beam Width	Mech. Downtilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha	850	40	14.1	1028.2	HPA-65R-BUU-H8	61	0	8	96
		1900	80	15.0	2529.8		62			
		1900	60	15.0	1897.4	HPA-65R-BUU-H8	62	0	8	96
		700	60	13.2	1253.6		65			
		2300	60	15.6	2178.5	HPA-65R-BUU-H8	60	0	8	96
		850	60	14.1	1542.2		61			
		700	60	13.2	1253.6	HPA-65R-BUU-H8	65	0	8	96
		1900	60	15.0	1897.4		62			
	Beta	1900	60	15.0	1897.4	HPA-65R-BUU-H8	62	0	8	96
		850	40	14.1	1028.2		61			
		1900	80	15.0	2529.8	HPA-65R-BUU-H8	62	0	8	96
		1900	60	15.0	1897.4		62			
		700	60	13.2	1253.6	HPA-65R-BUU-H8	65	0	8	96
		2300	60	15.6	2178.5		60			
		850	60	14.1	1542.2	HPA-65R-BUU-H8	61	0	8	96
		700	60	13.2	1253.6		65			
	Gamma	1900	60	15.0	1897.4	HPA-65R-BUU-H8	62	0	8	96
		1900	60	15.0	1897.4		62			
		850	40	14.1	1028.2	HPA-65R-BUU-H8	61	0	8	96
		1900	80	15.0	2529.8		62			
		1900	60	15.0	1897.4	HPA-65R-BUU-H8	62	0	8	96
		700	60	13.2	1253.6		65			
		2300	60	15.6	2178.5	HPA-65R-BUU-H8	60	0	8	96
		850	60	14.1	1542.2		61			
		700	60	13.2	1253.6	HPA-65R-BUU-H8	65	0	8	96
		1900	60	15.0	1897.4		62			
		1900	60	15.0	1897.4	HPA-65R-BUU-H8	62	0	8	96
		850	60	15.0	1897.4		62			

Table 1: Proposed Antenna Inventory^{2 3}

² Antenna height listed for AT&T is in reference to the AEG Advanced Engineering Group, P.C. Zoning Drawings dated December 2, 2013.

³ In cases where a specific antenna pattern is unavailable, a comparable antenna pattern was utilized for calculation purposes.

5. Calculation Results

6. The calculated power density results are shown in Figure 1 below. Each frequency band and technology is calculated individually, along with the resulting composite percent of MPE. For completeness, the calculations for this analysis cover a horizontal distance range of 0 feet (directly below the antennas) to 2,500 feet (from the base of the site). In addition to the other worst case scenario considerations previously mentioned, the power density calculations to each horizontal distance point away from the antennas were completed using a local maximum off-beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

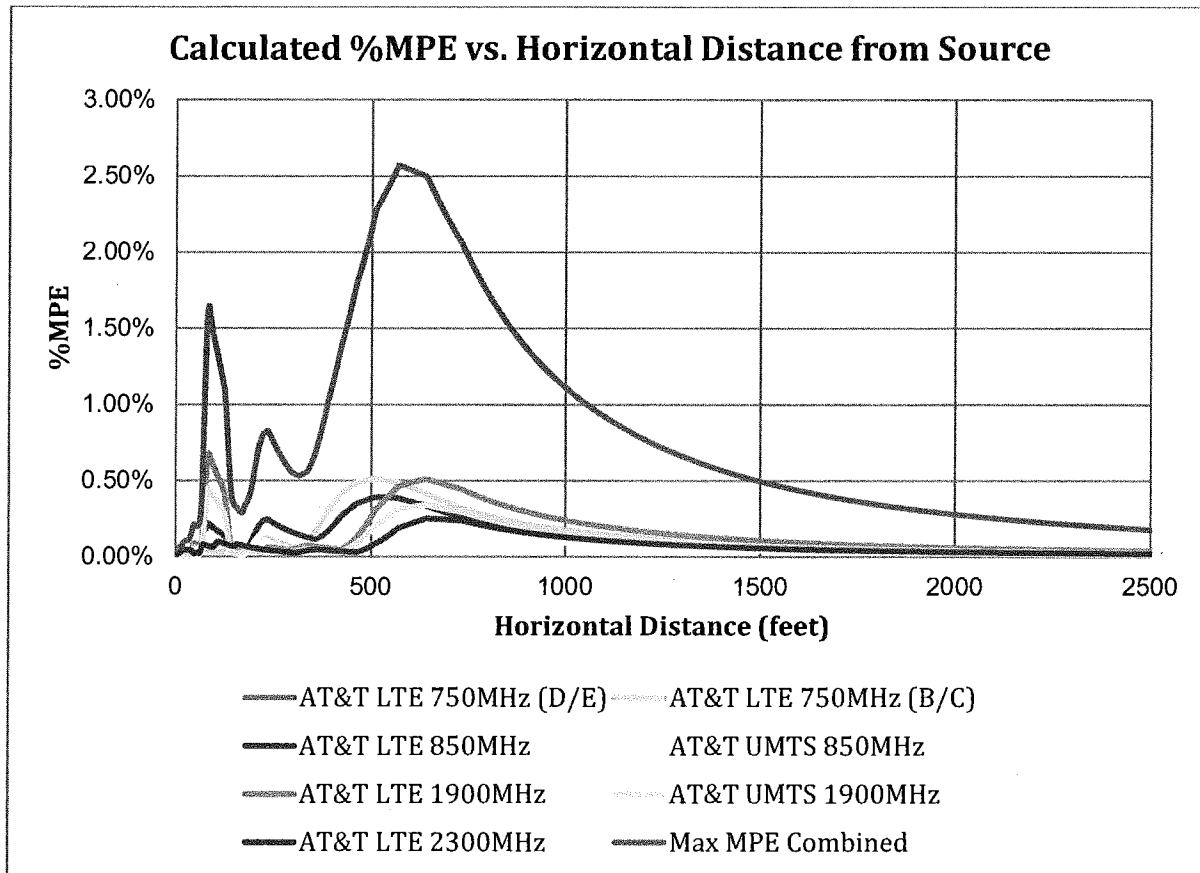


Figure 1: Graph of Percent of MPE vs. Distance

The highest composite percent of MPE (2.57%) was calculated to occur at a horizontal distance of 569 feet from the tower. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 750 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 3 below lists percent of MPE value for each technology as well as the associated parameters that were included in the calculations. The highest composite percent of MPE value was calculated to occur at a horizontal distance of 569 feet from the tower (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, 6 feet was subtracted from the height of the antennas for this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the finished installation.

Carrier	Number of Trans.	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	%MPE
AT&T LTE 1900MHz	4	30.0	96.0	569	0.004610	1.000	0.46%
AT&T LTE 2300MHz	2	30.0	96.0	569	0.001878	1.000	0.19%
AT&T LTE 750MHz (B/C)	2	30.0	96.0	569	0.002431	0.500	0.49%
AT&T LTE 750MHz (D/E)	2	30.0	96.0	569	0.002431	0.500	0.49%
AT&T LTE 850MHz	2	30.0	96.0	569	0.002183	0.567	0.39%
AT&T UMTS 1900MHz	2	40.0	96.0	569	0.003073	1.000	0.31%
AT&T UMTS 850MHz	1	40.0	96.0	569	0.001456	0.567	0.26%
Total							2.57%

Table 2: Maximum Percent of Emissions Values⁴

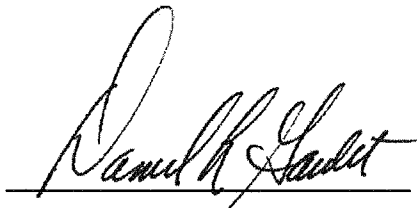
⁴ Transmit power assumes 0 dB of cable loss.

7. Conclusion

The above analysis verifies that the AT&T emissions from the site will be well below the maximum levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum percent of MPE calculated at ground level is **2.57% of the FCC limit**. This maximum percent of MPE value is calculated to occur 569 feet away from the site.

8. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

December 5, 2013

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure⁵

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure⁶

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

⁵ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

⁶ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

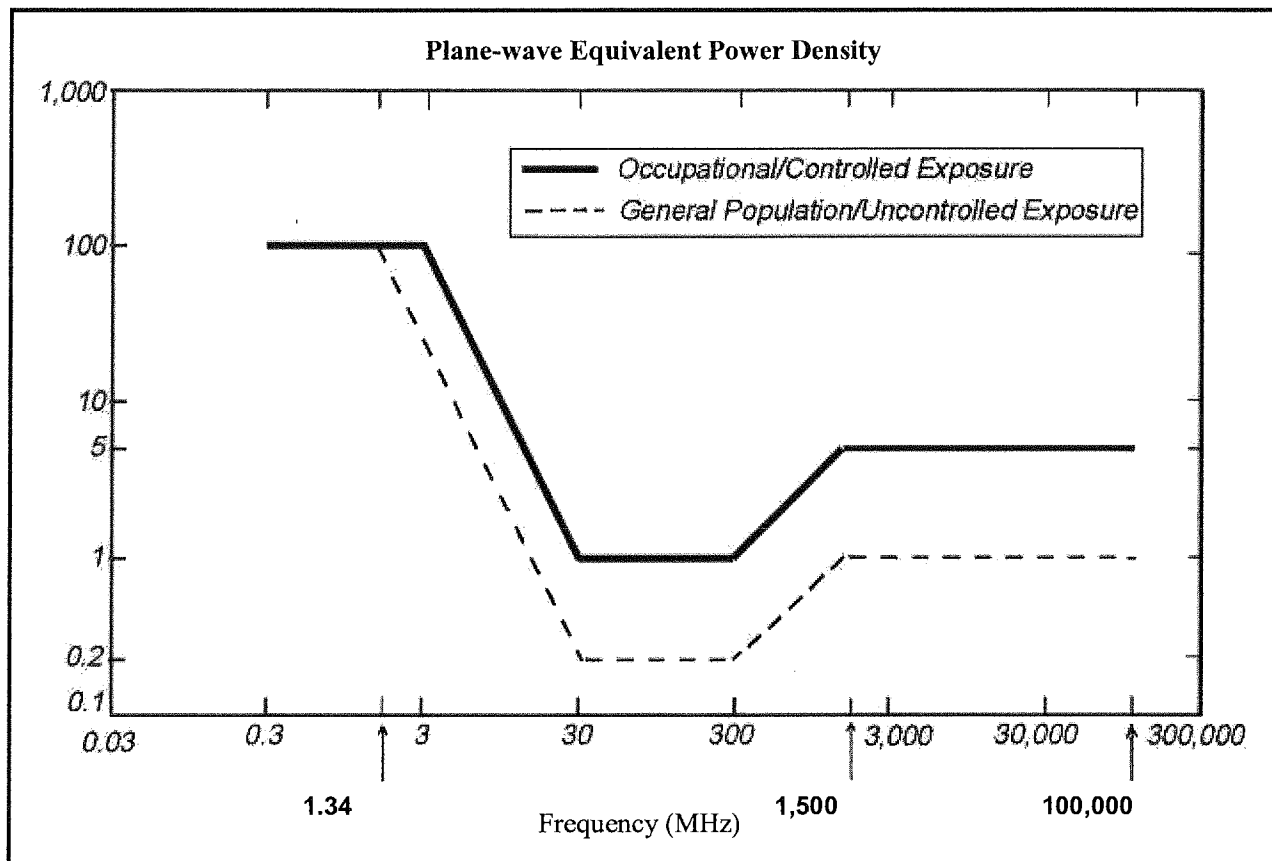
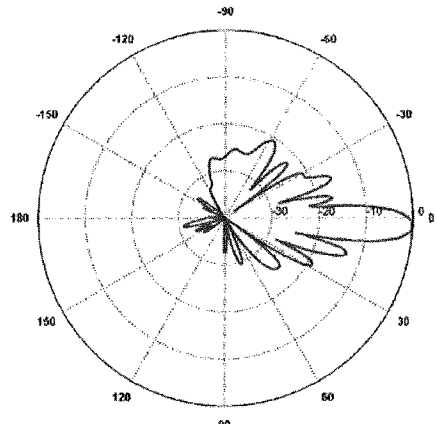
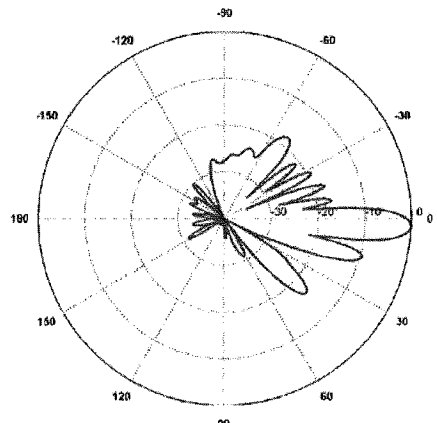
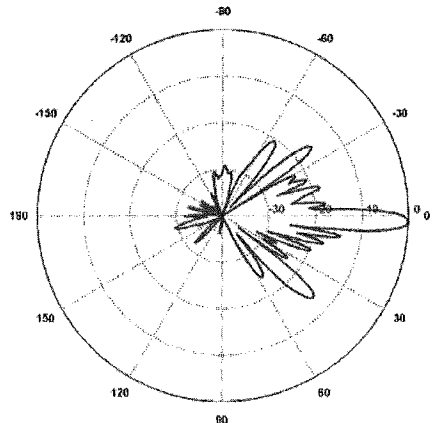


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

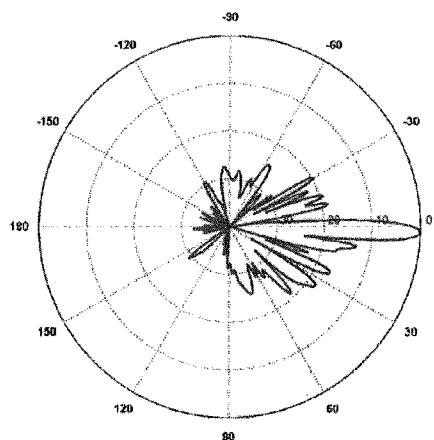
Attachment C: AT&T's Antenna Model Data Sheets and Electrical Patterns⁷

<p>750 MHz</p> <p>Manufacturer: CCI Antennas Model #: HPA-65R-BUU-H8 Frequency Band: 698-806 MHz Gain: 13.2 dBd Vertical Beamwidth: 10.1° Horizontal Beamwidth: 65° Polarization: ±45° Size L x W x D: 92.4" x 14.8" x 7.4"</p>	 <p>A polar plot showing the radiation pattern of the antenna at 750 MHz. The plot is circular with concentric dashed lines representing gain levels. The main beam is directed towards 0 degrees, with a horizontal beamwidth of 65 degrees. The vertical beamwidth is 10.1 degrees. The pattern shows a main lobe and several side lobes.</p>
<p>850 MHz</p> <p>Manufacturer: CCI Antennas Model #: HPA-65R-BUU-H8 Frequency Band: 824-894 MHz Gain: 14.1 dBd Vertical Beamwidth: 8.4° Horizontal Beamwidth: 61° Polarization: ±45° Size L x W x D: 92.4" x 14.8" x 7.4"</p>	 <p>A polar plot showing the radiation pattern of the antenna at 850 MHz. The plot is circular with concentric dashed lines representing gain levels. The main beam is directed towards 0 degrees, with a horizontal beamwidth of 61 degrees. The vertical beamwidth is 8.4 degrees. The pattern shows a main lobe and several side lobes.</p>
<p>1900 MHz</p> <p>Manufacturer: CCI Antennas Model #: HPA-65R-BUU-H8 Frequency Band: 1850-1990 MHz Gain: 15.0 dBd Vertical Beamwidth: 5.6° Horizontal Beamwidth: 62° Polarization: ±45° Size L x W x D: 92.4" x 14.8" x 7.4"</p>	 <p>A polar plot showing the radiation pattern of the antenna at 1900 MHz. The plot is circular with concentric dashed lines representing gain levels. The main beam is directed towards 0 degrees, with a horizontal beamwidth of 62 degrees. The vertical beamwidth is 5.6 degrees. The pattern shows a main lobe and several side lobes.</p>

⁷ Where CCI antenna patterns are not currently available from the manufacturer, patterns from a comparable antennas were used for the calculations and figures presented in Attachment C.

2300 MHz

Manufacturer: CCI Antennas
Model #: HPA-65R-BUU-H8
Frequency Band: 2305-2360 MHz
Gain: 15.6 dBd
Vertical Beamwidth: 4.5°
Horizontal Beamwidth: 60°
Polarization: $\pm 45^\circ$
Size L x W x D: 92.4" x 14.8" x 7.4"



SECTION 12



500 North Broadway
East Providence, RI 02914
Ph: (401) 354-2403
Fax: (401) 633-6354

December 9, 2013

Wareham, Zoning Board of Appeals
Memorial Town Hall
54 Marion Road
Wareham, MA 02571

RE: Structural Assessment
Proposed antenna installation
2 Warr Avenue
Wareham, MA 02571
AT&T Reference: MA1433

AFFIDAVIT

The following information has been provided on behalf of AT&T for the proposed wireless communications facility at the above location.

I, Scott Adams under oath do depose and say:

1. My name is Scott N. Adams. I am a licensed professional civil engineer in the Commonwealth of Massachusetts with registration number 46006.
2. I am a principal in the firm Advanced Engineering Group, P.C. working as consultant for the Wireless industry located at 500 N Broadway, East Providence, RI 02914. My professional services include providing professional engineering services for the design and construction of wireless facilities.
3. I am familiar with the design and construction of antenna support structures including monopoles, self-supported towers and guyed towers. I have been involved with the design and construction of wireless facilities throughout New England for over fourteen (14) years. My experience, as it relates to wireless facilities, includes foundation analysis and design, geotechnical analysis and reporting, drainage analysis and design, surveying, and site design.
4. This affidavit has been prepared in conjunction with a Special Permit/Site Plan Approval application submitted by AT&T Wireless to allow the construction of a new 100-foot self-supporting monopole-type antenna support structure on a site located at the above referenced property. The purpose of the affidavit is to provide the Zoning Board with an understanding of the engineering design and construction standards applicable to antenna support structures and to provide an expert opinion on the probable fall zone in the unlikely event of a structural failure.
5. The proposed antenna support structure proposed by the applicant will consist of a 100-foot tall tapered, slip-joint galvanized steel monopole. The base diameter will be approximately 60 inches and will taper to an approximate diameter of 30 inches at the top. The monopole is custom fabricated and the exact dimensions and details vary with each manufacturer. The pole cross-section is formed from a single steel plate, is bent on an industrial break-press with 16 flat faces to approximate a circle and is joined vertically with a welded seam. The pole is manufactured in sections that are 30 to 50 feet long and are assembled in the field with a slip-joint or friction joint between adjacent sections. The proposed foundation will consist of a reinforced concrete footing with approximate overall dimensions of 25 feet by 25 feet, approximately three (3) feet thick and set at a depth of approximately six (6) feet.
6. The proposed monopole and foundation will be designed by a Massachusetts registered professional engineer in accordance with the Massachusetts State Building Code and the national tower code ANSI/TIA/EIA-222-G (Structure



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Class II) to withstand the most severe wind and icing conditions that can be reasonably expected to occur at the site. ANSI/TIA/EIA-222-G, Structure Class II, is the industry standard design criteria for commercial wireless communications, television and radio broadcasting towers where the tower will not be utilized for civil or national defense, emergency, rescue or disaster operations or military. Under the provisions of the Massachusetts State Building Code, this detailed structural engineering information will be available at the time a building permit application is filed.

7. The occurrence of failure of a properly designed, constructed, and maintained monopole is extremely rare. Load tests have determined that the probable structural failure mechanism is a bending or buckling of the monopole near its mid-point. A bent monopole reduces surface areas exposed to wind loading at the top thereby causing a redistribution of stress to lower monopole sections. Even with a complete structural failure of the monopole at the buckle point, the lower sections lean and remain standing while the upper sections topple in a hinge-like fashion. Under a catastrophic failure scenario where the upper half completely separates at the hinge point, it is my opinion that a conservative estimate of the monopole "fall zone" would be approximately $\frac{1}{2}$ the overall structure height. Furthermore, engineering studies of tower failures and debris scatter show a statistical mean "fall zone" of $\frac{1}{2}$ the overall structure height as referenced in a publication entitled: "Atmospheric Icing and Tower Collapse in the United States", 1996, U.S. Army Cold Regions Research and Engineering Laboratory.
8. Industry statistics indicate that monopole failures are extremely rare with structures that are designed and constructed in accordance with ANSI/TIA/EIA-222-G standards. Based on building code requirements and industry design standards, it is my opinion that a properly constructed 100-foot monopole in Massachusetts can survive wind speeds of approximately equivalent to a Category Five Hurricane (winds exceeding 155 mph) or a F4 Tornado (Fujita Scale wind speeds from 207 to 260 mph with damage described as entire wood-frame structures blown off their foundations).
9. Based on the findings outlined above, it is my professional opinion that the proposed T-Mobile telecommunications monopole and foundation will be designed under the most stringent requirements specified in the Massachusetts State Building Code and national tower code ANSI/TIA/EIA/222-G (structure class II) and will be certified by a Massachusetts registered professional engineer. The estimated maximum theoretical survival wind speed of the structure will be designed per the guidelines above with the most likely failure scenario being impact of wind-borne flying debris, including parts of buildings, during a Category Five Hurricane or F4 Tornado. Engineering studies of tower failures and debris scatter show a statistical mean "fall zone" of $\frac{1}{2}$ the overall structure height which I opine is suitable for a monopole-type antenna support structure.

Based on the findings and information provided above, it is my professional opinion that if the proposed monopole is designed as described above, the most common mode of failure is in the upper middle region of the tower causing a fall zone less than or equal to $\frac{1}{2}$ the tower height (50 feet max. in this case).

Should you have any questions please contact me at 508-989-7979.

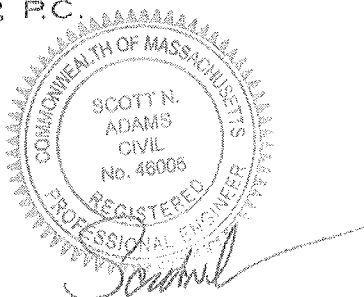
I, Scott N. Adams, being first duly sworn on oath, state that I am the same Scott N. Adams identified in the testimony being filed with this Affidavit, that I have caused the testimony to be prepared and am familiar with its contents, and that the testimony is true and correct to the best of my knowledge and belief as of the date of this Affidavit.



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East Providence, RI 02914
Ph: (401) 354-2403
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Very truly yours,

Scott N. Adams, P.E.
Advanced Engineering Group, P.C.



Personally appeared before me, Scott N. Adams subscribed and sworn that the above made statements by him are true, this _____ day of _____, 2013.

Notary Public

MARC CHRETIEN
NOTARY PUBLIC OF RHODE ISLAND
My Commission Expires 3/12/2014

My Commission Expires: _____

SECTION 13