
SECTION 285000 – EMERGENCY RADIO COMMUNICATION ENHANCEMENT SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.
- B. New Hanover County Emergency Management Radio Station Authorization and Technical Specifications FCC document (attached for reference after this Section).

1.2 SUMMARY

- A. Section Includes: In-building radio signal amplification system.
- B. New Hanover County Fire Marshal has indicated that the system will be required only for building additions, not existing building space. The building additions will include the 2nd floor, 1st floor entry, and 1st floor stair. Additional coordination with Wrightsville Beach Fire Department will be required to determine if their requirements differ from New Hanover County's.

1.3 DEFINITIONS

- A. AHJ Authority Having Jurisdiction
- B. BDA Bi-Directional Amplifier: Device used to amplify band-selective or multi-band RF signals in the uplink, to the base station and in the downlink from the base station to subscriber devices for enhanced signals and improved coverage
- C. DAS Distributed Antenna System
- D. FCC Federal Communications Commission
- E. RF Radio Frequency

1.4 ACTION SUBMITTALS

- A. RF Surveys / Shop Drawings: Measurement drawings of each floor of the building which indicate relative RF field strength for each frequency and band of interest. Submit to both the AHJ and the Engineer.
 - 1. Initial signal strength mapping. Perform an initial site survey to measure signal strength before construction starts.
 - 2. Pre-final signal strength mapping. Perform a site survey to measure signal strength near substantial completion of the building.
- B. Shop Drawings:
 - 1. Include plans and details for code compliant, UL Listed, DAS system design for emergency responder radio coverage.
- C. Product Data:
 - 1. Include bill of materials for all BDA / DAS equipment and components.

2. Manufacturer product data sheets and cut sheets for all equipment and components.

- D. Manufacturer Seismic Qualification Certification: Submit certification that poles, accessories, and components will withstand seismic forces defined in Section "Seismic Controls for Electrical Work." Include the following:

1. Basis of Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified after the seismic event."
2. Dimensioned Drawings: Identify, locate, and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: Manufacturer's standard warranty.

1.6 CLOSEOUT SUBMITTALS

- A. RF Survey / Shop Drawings: Final installed measurement drawings of each floor of the building which indicate relative RF field strength for each frequency and band of interest.
- B. Operation and Maintenance Data: For all system equipment and components to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components that fail in materials or workmanship within a specified warranty period.
 1. Warranty Period: Two years from date of Final Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Provide an in-building radio signal amplification system to provide complete coverage in the building for the public safety agencies. System shall meet the requirements of:
 1. The local AHJ.
 2. FCC.
 3. The North Carolina Fire Code.
 4. NFPA 72, National Fire Alarm and Signaling Code.

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- 5. NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.
 - 6. UL 2524, Standard for In-building 2-Way Emergency Radio Communication Enhancement Systems.
- B. Seismic Performance: System equipment and components shall withstand the effects of earthquake motions.

PART 3 - EXECUTION

3.1 RF FIELD SURVEYS

- A. Perform initial field survey to determine that a system is required due to inadequate radio signal coverage.
- B. Perform a pre-design field survey to determine signal strength data required to perform design.

3.2 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Install system equipment and components.
- B. Coordinate infrastructure needs for system installation.

3.4 IDENTIFICATION

- A. Identify and mark equipment and components with engraved labels as specified in Section "Electrical Identification".

3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to:
 - 1. Test and adjust equipment and components.
 - 2. Perform startup and commissioning of system.
- B. Tests and Inspections:
 - 1. Perform final testing for the local inspection authority, including final signal strength mapping.
 - 2. Perform final testing and demonstration with the AHJ.
 - 3. Submit final signal strength mapping results shop drawings.

END OF SECTION 285000

REFERENCE COPY

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**Federal Communications Commission
Public Safety and Homeland Security Bureau**

RADIO STATION AUTHORIZATION

LICENSEE: NEW HANOVER COUNTY EMERGENCY
MANAGEMENT

ATTN: STEVEN STILL
NEW HANOVER COUNTY EMERGENCY MANAGEMENT
230 GOVERNMENT CENTER DR., SUITE 115
WILMINGTON, NC 28403

Call Sign WPHZ633	File Number 0007641295
Radio Service YE - PubSafty/SpecEmer/PubSaftyNtlPlan,806-817/851 -862MHz,Trunked	
Regulatory Status PMRS	
Frequency Coordination Number	

FCC Registration Number (FRN): 0001917491

Grant Date 08-18-2015	Effective Date 02-01-2017	Expiration Date 08-23-2025	Print Date 02-01-2017
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STATION TECHNICAL SPECIFICATIONS

Fixed Location Address or Mobile Area of Operation

- Loc. 1 Address:** 3405 FREDERICKSON RD
City: WILMINGTON **County:** NEW HANOVER **State:** NC
Lat (NAD83): 34-17-09.0 N **Long (NAD83):** 077-58-31.0 W **ASR No.:** 1012165 **Ground Elev:** 3.9
- Loc. 2 Area of operation**
Land Mobile Control Station meeting the 6.1 Meter Rule: NEW HANOVER county, NC
- Loc. 3 Area of operation**
Countywide: NEW HANOVER, NC
- Loc. 4 Address:** HILL VALLEY WALK
City: WILMINGTON **County:** NEW HANOVER **State:** NC
Lat (NAD83): 34-05-04.0 N **Long (NAD83):** 077-53-17.0 W **ASR No.:** 1002256 **Ground Elev:** 1.5
- Loc. 5 Address:** 230 MARKET PLACE DRIVE
City: WILMINGTON **County:** NEW HANOVER **State:** NC
Lat (NAD83): 34-14-33.8 N **Long (NAD83):** 077-52-03.5 W **ASR No.:** 1250537 **Ground Elev:** 11.8
- Loc. 6 Address:** WILMINGTON NORTH, 5700 HOLLY SHELTER ROAD
City: CASTLE HAYNES **County:** NEW HANOVER **State:** NC
Lat (NAD83): 34-21-21.0 N **Long (NAD83):** 077-51-20.6 W **ASR No.:** 1229501 **Ground Elev:** 8.5

Antennas

Loc	Ant	Frequencies	Sta. Cls.	No.	No.	Emission	Output	ERP	Ant.	Ant.	Construct
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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.

Licensee Name: NEW HANOVER COUNTY EMERGENCY

Call Sign: WPHZ633

File Number: 0007641295

Print Date: 02-01-2017

No.	No.	(MHz)	Units	Pagers	Designator	Power (watts)	(watts)	Ht./Tp meters	AAT meters	Deadline Date
1	1	000856.93750000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	12-12-2006
1	1	000856.23750000	FB2C	1	20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000856.48750000	FB2C	1	20K0F1E 20K0F3E 8K70F1W	150.000	220.000	180.4	180.6	01-12-2006
1	1	000856.98750000	FB2C	1	20K0F1E 20K0F3E 8K70F1W	150.000	220.000	180.4	180.6	01-12-2006
1	1	000857.23750000	FB2C	1	8K70F1W	100.000	220.000	180.4	180.6	01-12-2006
1	1	000857.48750000	FB2C	1	16K0F1D 20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000857.98750000	FB2C	1	16K0F1D 20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000858.23750000	FB2	1	20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000858.48750000	FB2	1	20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000858.71250000	FB2	1	8K70F1W	150.000	220.000	180.4	180.6	12-12-2006
1	1	000858.98750000	FB2	1	20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000859.23750000	FB2	1	20K0F1E 20K0F3E 8K70F1W	150.000	220.000	180.4	180.6	01-12-2006
1	1	000859.48750000	FB2	1	20K0F1E 20K0F3E 8K70F1W	150.000	220.000	180.4	180.6	01-12-2006
1	1	000859.98750000	FB2	1	20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	01-12-2006
1	1	000856.76250000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	12-07-2006
1	1	000857.76250000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	12-07-2006
1	1	000859.76250000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	12-07-2006

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1	1	000854.03750000	FB2	1	20K0F1E 20K0F3E 8K70F1W	100.000	220.000	180.4	180.6	07-24-2013
1	1	000854.68750000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	07-24-2013
1	1	000854.33750000	FB2	1	16K0F1D 20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	07-24-2013
1	1	000854.56250000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	07-24-2013
1	1	000856.51250000	FB2	1	8K70F1W	100.000	220.000	180.4	180.6	07-24-2013
1	1	000859.51250000	FB2	1	16K0F1D 20K0F1E 20K0F3E	150.000	220.000	180.4	180.6	07-24-2013
2	1	000811.23750000	FX1	50	20K0F1E 20K0F3E	15.000	35.000			
2	1	000811.26250000	FX1	50	20K0F3E	15.000	35.000			
2	1	000811.48750000	FX1	50	20K0F1E 20K0F3E 8K10F1E	15.000	35.000			
2	1	000811.93750000	FX1	50	8K10F1E	15.000	35.000			
2	1	000811.98750000	FX1	50	20K0F1E 20K0F3E 8K10F1E	15.000	35.000			
2	1	000812.23750000	FX1	50	8K10F1E	15.000	35.000			
2	1	000812.26250000	FX1	50	16K0F1D 20K0F3E	15.000	35.000			
2	1	000812.48750000	FX1	50	16K0F1D 20K0F1E 20K0F3E	15.000	35.000			
2	1	000812.98750000	FX1	50	16K0F1D 20K0F1E 20K0F3E	15.000	35.000			
2	1	000813.23750000	FX1	50	20K0F1E 20K0F3E	15.000	35.000			
2	1	000813.26250000	FX1	50	16K0F1D	15.000	35.000			

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2	1	000813.48750000	FX1	50	20K0F1E 20K0F3E	15.000	35.000
2	1	000813.71250000	FX1	50	8K10F1E	15.000	35.000
2	1	000813.98750000	FX1	50	20K0F1E 20K0F3E	15.000	35.000
2	1	000814.23750000	FX1	50	20K0F1E 20K0F3E 8K10F1E	15.000	35.000
2	1	000814.26250000	FX1	50	16K0F1D 20K0F3E	15.000	35.000
2	1	000814.48750000	FX1	50	20K0F1E 20K0F3E 8K10F1E	15.000	35.000
2	1	000814.98750000	FX1	50	20K0F1E 20K0F3E	15.000	35.000
2	1	000811.76250000	FX1	50	8K10F1E	15.000	35.000
2	1	000812.76250000	FX1	50	8K10F1E	15.000	35.000
2	1	000814.76250000	FX1	50	8K10F1E	15.000	35.000
2	1	000809.03750000	FX1	50	20K0F1E 20K0F3E 8K10F1D 8K10F1E	15.000	35.000
2	1	000811.08750000	FX1	50	16K0F1D 20K0F3E	15.000	35.000
2	1	000809.68750000	FX1	50	8K10F1D 8K10F1E	15.000	35.000
2	1	000809.33750000	FX1	50	16K0F1D 20K0F1E 20K0F3E	15.000	35.000
2	1	000809.56250000	FX1	50	8K10F1D 8K10F1E	15.000	35.000
2	1	000811.51250000	FX1	50	8K10F1D 8K10F1E	15.000	35.000

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3	1	000811.23750000	MO	2500	20K0F1E 20K0F3E	35.000	50.000
3	1	000811.26250000	MO	2500	20K0F3E	35.000	50.000
3	1	000811.48750000	MO	2500	20K0F1E 20K0F3E 8K10F1E	35.000	50.000
3	1	000811.93750000	MO	2500	8K10F1E	35.000	50.000
3	1	000811.98750000	MO	2500	20K0F1E 20K0F3E 8K10F1E	35.000	50.000
3	1	000812.23750000	MO	2500	8K10F1E	35.000	50.000
3	1	000812.26250000	MO	2500	16K0F1D 20K0F3E	35.000	50.000
3	1	000812.48750000	MO	2500	16K0F1D 20K0F1E 20K0F3E	35.000	50.000
3	1	000812.98750000	MO	2500	16K0F1D 20K0F1E 20K0F3E	35.000	50.000
3	1	000813.23750000	MO	2500	20K0F1E 20K0F3E	35.000	50.000
3	1	000813.26250000	MO	2500	16K0F1D 20K0F3E	35.000	50.000
3	1	000813.48750000	MO	2500	20K0F1E 20K0F3E	35.000	50.000
3	1	000813.71250000	MO	2500	8K10F1E	35.000	50.000
3	1	000813.98750000	MO	2500	20K0F1E 20K0F3E	35.000	50.000
3	1	000814.23750000	MO	2500	20K0F1E 20K0F3E 8K10F1E	35.000	50.000
3	1	000814.26250000	MO	2500	16K0F1D 20K0F3E	35.000	50.000

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4	1	000856.48750000	FB2	1	8K70D1W	100.000	500.000	121.9 121.2 12-07-2006
4	1	000856.76250000	FB2	1	8K70D1W	100.000	500.000	121.9 121.2 12-07-2006
4	1	000856.93750000	FB2	1	8K70D1W	100.000	500.000	121.9 121.2 12-07-2006
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4	1	000857.26250000	FB2	1	16K0F1D 20K0F3E	100.000	500.000	121.9 121.2 12-07-2006
4	1	000857.76250000	FB2	1	8K70D1W	100.000	500.000	121.9 121.2 12-07-2006
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6	1	000856.48750000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	12-07-2006
6	1	000856.76250000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	12-07-2006
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6	1	000856.98750000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	12-07-2006
6	1	000857.23750000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	12-07-2006
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6	1	000859.23750000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	12-07-2006
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6	1	000854.68750000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	07-24-2013
6	1	000854.56250000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	07-24-2013
6	1	000856.51250000	FB2	1	8K70D1W	100.000	250.000	97.5	99.7	07-24-2013

Control Points

Control Pt. No. 1

Address: 220 Government Center Drive

City: WILMINGTON **County:** NEW HANOVER **State:** NC **Telephone Number:** (910)798-6920

Associated Call Signs

<NA>

Licensee Name: NEW HANOVER COUNTY EMERGENCY

Call Sign: WPHZ633

File Number: 0007641295

Print Date: 02-01-2017

Waivers/Conditions:

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

The application for this radio facility included a request for waiver of the freeze on the filing of applications during the 800 MHz rebanding process as announced the appropriate public notice for the Wave region where the station is located. The freeze period has since expired and therefore the request for waiver of the filing freeze is dismissed as moot.