

**SECTION 27 51 13**  
**OVERHEAD PAGING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Requirements of the following Division 26 Sections apply to this Section:
  - 1. Basic Electrical Requirements.
  - 2. Basic Electrical Materials and Methods.

**1.2 SUMMARY**

- A. This Section includes the installation of new overhead paging speakers and home run cabling to be added to the existing paging system in the facility. It includes requirements for paging system components including, but not limited to, the following:
  - 1. Speaker systems (Both One Way paging and Two Way talk back).
  - 2. Wiring
- B. Related Sections: The following Division 26 Section contains requirements that relate to this Section:
  - 1. "Raceways", for raceways used for overhead paging system cables.
  - 2. "Electrical Boxes and Fittings", for boxes, cabinets, and fittings used with overhead paging systems.

**1.3 SYSTEM DESCRIPTION**

- A. General: The existing overhead paging system shall continue to function as a complete system for amplifying sound signals to new speakers designated as "one way" installed in the OR area from the existing amplifier headend. Zone selection shall continue to be made using direct dial through the telephone system.
- B. Functional Performance: Components and system features and functions shall include, but are not limited to, the following:
  - 1. Meet the following performance parameters as measured in 1/3 octave bands:
    - a. From 100 Hz to 2kHz, flat within plus or minus 2dB.
    - b. Above 2kHz, slope down along an approximate 3dB octave slope to 8kHz.
  - 2. When driven to maximum output, clipping shall first occur in power amplifiers.

3. No noise, hum, RFI pickup or distortion shall be audible under normal operating conditions.
4. The overhead paging system shall reproduce program material at a level of 85 dBA without audible distortion.

#### **1.4 SUBMITTALS**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
  1. Product data for each type of product specified.
  2. Shop drawings detailing equipment layout elevations and specific installation requirements.
  3. Wiring Diagrams detailing wiring for power, signal, and control, differentiating clearly between manufacturer-installed wiring and field-installed wiring. Identify terminal numbers and wiring color codes to facilitate installation, operation, and maintenance.

#### **1.5 QUALITY ASSURANCE**

- A. Electrical Component Standard: Provide work complying with applicable requirements of NFPA 70 "National Electrical Code."
- B. EIA Compliance: Comply with the following Electronics Industries Association Standards:
  1. Sound Systems, EIA-160.
  2. Loudspeaker, Dynamic Magnetic Structures, and Impedance, EIA-299-A.
  3. Speakers for Sound Equipment, SE-103.
- C. UL Compliance: Comply with requirements of UL 50.

### **PART 2 - PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
  1. Valcom

#### **2.2 SYSTEM REQUIREMENTS**

- A. General: Provide complete and fully functional overhead paging systems using materials and equipment of types, sizes, ratings, and performances as indicated. Use materials and equipment that comply with referenced standards and manufacturers' standard design and construction in accordance with published product information. Coordinate the features of materials and equipment so they form an integrated system with components and interconnections matched for optimum performance of specified functions.

#### **2.3 EQUIPMENT AND MATERIALS**

CT Site Prep  
Building Shell and Interior  
VA Project 660-CSI-104

- A. One Way Page Loudspeakers shall be the Valcom V-1020C.
- B. Page Controller shall be the Valcom V-2924 (24 station).
- C. Cable shall be four pair Cat 3 UTP. Comply with Division 26 Section AWires and Cables except as indicated.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine conditions, with the Installer present, for compliance with requirements and other conditions affecting the performance of the Overhead Paging System work.
- B. Do not proceed until unsatisfactory conditions have been corrected.
- C. Verify compliance of the following items before beginning sound equipment installation.
  - 1. No cables spliced except at standard barrier terminal blocks inside equipment cabinet or at existing speaker locations.
  - 2. Cables marked at each end with permanent wire labels such as Brady or equal.
  - 3. Isolated ground run back to main electrical panel from paging equipment cabinet.
  - 4. Specified conduit, cables, speaker enclosures and equipment cabinets are properly installed.

#### **3.2 INSTALLATION**

- A. General: Install system in accordance with NFPA 70 and other applicable codes. Install equipment in accordance with manufacturer's written instructions.
- B. Speakers:
  - 1. Confirm polarity of speaker before installation and wire to maintain uniform polarity.
  - 2. Neatly mount speaker grilles, panels, connector plates, etc., tight, plumb, and square unless indicated otherwise on drawings.
  - 3. Provide brackets, screws, adapters, springs, rack mounting kits, etc., recommended by manufacturer for correct assembly and installation of speaker assemblies and electronics components.
- C. Cables:
  - 1. Leave sufficient service loops of uniform length.
  - 2. Do not parallel or branch cables and lines except at standard barrier terminal blocks using spade lugs. Label all zone cabling.
  - 3. Secure cables to equipment cabinet with wire ties to ensure neat installation. Do not use double-stick tape or sticky-back cable anchors. Keep speaker level, line level, and microphone level cables in separate runs and bundles.

4. Connect spade lugs to cables by soldering or by securely crimping with compression type crimpers.
- D. Repairs: Wherever walls, ceilings, floors, or other building finishes are cut for installation, repair, restore, and refinish to original appearance.

### **3.3 FIELD QUALITY CONTROL**

- A. Pretesting: Upon completing installation of the system, align, adjust, and balance the system and perform complete pretesting. Determine, through pretesting, the conformance of the system to the requirements of the Drawings and Specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new, and retest until materials satisfactory performance and conditions are achieved.

- - - E N D - - -