

SECTION 27 53 10
EMERGENCY RADIO COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Conduits, terminal cabinets, and boxes
- B. Power wiring

1.2 SYSTEM DESCRIPTION

- A. Emergency radio communications systems shall include the furnishing and installation of raceway systems and power feeds for the emergency broadcast receiver, radio communications repeater-station, hurricane shelter communications and wireless propagation enhancement systems.
- B. Raceways, cabinets, and power feeds for the emergency radio communication system shall be designed and installed to allow installation of future Bi Directional Amplifier Systems (BDA) and/or Distributed Antenna Systems (DAS) as required by NFPA 1, NFPA 72, and NFPA 1225.

1.3 SUBMITTALS

- A. Submit under the provisions of Section 01 33 00.
- B. Shop Drawings: Indicate layout, raceway diagrams, and equipment dimensions.
- C. Product Data: Provide data sheets for each item of equipment, depicting equipment capacity.

1.4 RECORD DRAWINGS

- A. Submit under the provisions of Section 01 77 00.
- B. Accurately indicate actual locations of power receptacles, boxes, and conduit runs.

PART 2 PRODUCTS

2.1 CONDUIT AND BOXES

A. ALL SITES

- 1. Provide & install a 1½" raceway to the outside of building through the roof at the Emergency Broadcast Receiver/Repeater antenna location, terminate with a weather head.
- 2. The penetrating portion of conduit shall be a contiguous 10' piece of rigid, with 6' firmly supported at two joist points below the roof penetration and 4 feet above the roof .
- 3. Continue this raceway and terminate into a 6" x 6" x 4" box located just above the ceiling at the designated Emergency Broadcast Receiver/Repeater "head-end" room location.
- 4. Provide and install two ¾" conduits run from the 6" x 6" x 4" box and terminate into two flush mounted 4-11/16" x 4-11/16" x 1½" boxes with single gang mud rings and single gang covers 48" AFF in their respective locations in the designated "head-end" room.
- 5. Do not provide ½" conduits, minimum conduit size shall be ¾".

B. ALL BUILDINGS

- 1. Provide & install a 1½" raceway to outside of building through the roof at the buildings Wireless Propagation Enhancement location and terminate with a weather head.
- 2. The penetrating portion of conduit shall be a contiguous 10' piece of rigid, with 6' firmly supported at two joist points below the roof penetration and 4' above the roof.
- 3. Continue this raceway and terminate into a 6" x 6" x 4" box located just above the ceiling at the designated Wireless Propagation Enhancement "head-end" room location.
- 4. For each floor of the respective building, provide and install one ¾" conduit run from the 6" x 6" x 4" box and terminate into one flush mounted 4-11/16" x 4-11/16" x 1 ½" box with single

gang mud rings and single gang covers 48" AFF in their respective locations in the designated "head-end" room.

C. HURRICANE SHELTERS

1. Provide and install an antenna mounting structure located next to the Hurricane Shelter antenna stub-out location.
 - a. Design the antenna mounting structure to support an antenna array of six 6-element Yagi 9dBd gain antennas model #460-6.
 - b. Structure shall meet ASCE-78 requirements.
 - c. Top of structure shall be at least 49' (15 Meters) above grade.
2. Provide & install a 2" raceway to outside of building at the designated Hurricane Shelter antenna mounting structure location and terminated with a weather head.
 - a. Continue this raceway and terminate into a 6" x 6" x 4" box located just above the ceiling at the designated Hurricane Shelter "head-end" room location.
 - b. Provide and install (2) ¾" conduits run from the 6" x 6" x 4" box and terminate into two flush mounted 4-11/16" x 4-11/16" x 1½" boxes with single gang mud rings and single gang covers.
 - c. Locate these boxes 80" AFF, parallel with 4" between each in the designated "head-end" room.

2.2 POWER FEEDS

- A. Provide and install a dedicated duplex 120-volt power receptacle fed from the life safety branch of emergency generator power source in each of the designated emergency broadcast receiver, radio communications repeater-station, hurricane shelter communications and wireless propagation enhancement systems "head-end" locations.
- B. Locate adjacent to the "head-end" single gang boxes.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install systems in accordance with NECA "Standard of Installation" and Section 26 05 33.
- B. Obtain a detail book from the S.D.P.B.C. School Police Department Security Section for system specifics.
- C. Install a 200 lb strength pull string throughout the raceway systems.
- D. Mount all junction boxes located above ceiling with the opening facing down, and with a reasonable immediate access pathway provided.
 1. Note: The requiring of the removing of a light fixture or other similar ceiling equipment is not a reasonable access pathway).
- E. Antenna raceways shall not exceed 100' from the weather head to the designated "head-end" locations.

3.2 DEMONSTRATION AND TRAINING

- A. Training of the Owner's operation and maintenance personnel is required in cooperation with the Owner's Representative.
 1. Provide competent, factory authorized personnel to provide instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems.
 2. Schedule the instruction in coordination with the Owner's Representative after submission and approval of formal training plans.

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3. Refer to Section 01 91 00, Commissioning, for further contractor training requirements.
- B. Provide demonstration and training for all types of emergency communications systems installed in this project.

END OF SECTION