

SECTION 28 26 00

AREA OF RESCUE ASSISTANCE TWO-WAY COMMUNICATIONS SYSTEM

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. The requirements of the Contract Documents, including the General and Supplementary General Conditions, and Division 1 General Requirements shall apply to work of this Section.

1.02 SUMMARY

- A. The work covered by this Section of the Specification shall include all labor, equipment, materials, and services for a complete and operational Area of Refuge communication system. The system shall be complete with all necessary hardware, software, memory, programming, and updated Fire Alarm Graphic Annunciators/Maps specifically tailored for this installation.
- B. The main control shall provide connections for the command center (16 Station, 56 Station, or 112 Station), and up to 112 Remote Call Stations. A Main Control unit that needs additional control or audio expansion equipment shall not be acceptable.
- C. Main control shall provide power, voice amplification, signal tones, and control logic for Consoles and Remote Stations.
- D. System wiring shall not require shielded cable. System shall be capable of utilizing standard one, two, and three pair instrument/control wire.
- E. A self-charging battery backup shall maintain full system function during line power outages for up to 3 hours.
- F. The main control shall continuously supervise/test system for master and remote call station response. Diagnostic messages shall be reported to master consoles.
- G. Master Console shall display multiple calls simultaneously. Canceling a call from a Remote Station shall only be possible after acknowledging the call at the Master Console.
- H. Remote Call Stations shall be capable of hands-free communication and be available in indoor flush mounted vandal brushed stainless steel.
- I. Ability to interface with a PBX Telephone system to allow calls from Remote Stations to be forwarded to outside telephones. Systems not capable of forwarding calls to outside phones shall not be acceptable.

1.03 SYSTEM OPERATION

- A. Placing calls from remote call stations: Calls shall be placed on the system by momentarily pressing the call button on the Remote Call Station. This action shall cause the following to occur:
 - 1. The Remote Call Station's call placed LED indicator shall light steadily.
 - 2. An alert tone shall sound at the Remote Call Station to verify call placement.
 - 3. The audio and visual indicator at the Command Center shall activate and the Command Center shall identify the location of the calling station by name and number.
 - 4. Upon the Remote Area of Refuge Call being answered, the remote station shall be capable of playing a pre-recorded Location Identifier Message and repeat for pre-determined time frame (to be determined by DPS and DFD)
 - 5. The Master Console shall have the capability to display multiple calls simultaneously.
- B. Acknowledging/answering calls at the master console

1. The attendant shall acknowledge the call by either pressing the Push-to-Talk button on, touching the incoming call field, or by lifting the handset.
 2. When the call is acknowledged at the Master Console, the Call Placed visual indicator shall remain lit, and the Monitor LED on the Remote Call Station shall light steadily.
 3. The LCD display on the Master Console shall show the name and number of the selected station and “CONNECTED”, indicating that voice communication between the Master Console and the Remote Station exists.
 4. Hands-free, two-way communication may be conducted with the Master Console using the Remote Call Station’s built-in loudspeaker.
 5. If an acknowledged call is placed on hold, the Remote Call Station green LED indicator shall flash, the red LED shall extinguish, and a pulse tone shall be emitted every two seconds.
- C. Canceling calls: An incoming call shall only be canceled from the Master Console after it has been acknowledged. After the call has been canceled, the LED indicator extinguishes and communication is terminated.
- D. Originating calls at the master console: The Master Console shall be capable of initiating audio communication with a Remote Call Station at any time by dialing the station number on its keypad. The Master shall also be capable of paging a group of up to 10 Remote Call Stations to broadcast evacuation information.
- E. Telephone Interface (Coordination required with DPS DOTs)
1. The System shall function as described above regardless of whether the Telephone Interface is, or is not utilized. When the Telephone Interface is employed, calls placed from Remote Stations to an unstaffed Master Console shall automatically forward, after a pre-determined amount of time (15 to 60 seconds to be determined by DPS and DFD), to an outside telephone (911 for typical commercial installation and DPS Central Security for all DPS facilities).
 2. Any call placed from a remote station and subsequently forwarded to an outside telephone shall still be capable of being answered at the Master Console placing the party at each location (Master Console, Outside Phone, and Remote Station) into a three-way voice communication.
- F. Supervision: The system cabling and device operation shall be supervised. In the event of circuit trouble with any Remote Call Station, the Master Console shall display the name and number of the station and “TROUBLE.”

1.04 SUBMITTALS

- A. Shop Drawing Submittals.
1. Shop Drawings: Provide shop drawings of system layout and system wiring diagrams showing all equipment, device placement, and wiring connection required. Drawings include one-line riser diagrams, and device ID numbers.
 2. Product Data: Provide manufacturer’s data sheets for each device showing product appearance, electrical characteristics, and connection requirements.
 3. Manufacturer’s Installation Instructions: Indicate application conditions and limitations of use, as stipulated by the manufacturer. Include instructions for storage, handling, protection, examination, preparation, installation, and start-up of products.
 4. Exceptions: Provide a detailed listing of any and all exceptions, variances, and non-conformances to the specifications and contract design drawings. Failure to disclose any such items shall be grounds for immediate disapproval of submittals without comment.
- B. Record Drawing Submittals.
1. Record Drawings: Provide drawings of as-built system layout and system wiring diagrams showing all equipment, device placement, and wiring connection required. Drawings include one-line riser diagrams, and device ID numbers.
 2. Record drawings shall consist of two hard copy bond sets and one electronic copy on CD or flash drive

format.

C. Operation and Maintenance (O&M) Manuals

1. Operational Data: Provide operating instructions, detailed for the specific project.
2. Maintenance Data: Provide maintenance and repair procedures for each device provided, as applicable. Include any specific requirements particular to the project.
3. Equipment Data: Provide manufacturer data sheets or catalog sheets for each type of device provided.
4. Supplier Data: Provide system manufacturer and local service organization information. Include contact, phone numbers, and addresses, as applicable.
5. Warranty Data: Provide system warranty information, including all material and/or labor terms.

1.05 QUALITY ASSURANCE

- A. The equipment furnished under this specification shall be the standard product of one manufacturer.
- B. Each major component shall bear the manufacturer's name, and catalog number. Alternate equipment shall be considered only when the following have been submitted and approved in writing by the architect/engineer ten (10) days prior to opening of bid: A list of such alternate equipment and materials, together with three (3) copies of working and shop drawings. The base bid shall be on the equipment as specified. Alternate equipment must be so noted on a separate bid form with an add or deduct to the base bid.
- C. All components and the system as a whole shall meet or exceed the minimum standards issued by the EIA. All work in conjunction with this installation shall meet the provisions of the National Electrical Code.
- D. The system shall conform to the requirements stated in the current Americans with Disabilities Act (ADA).
- E. 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.
- F. The power supply transformer shall be listed by Underwriters Laboratories Inc.
- G. The system shall have the availability of local service by factory-trained personnel from an authorized distributor of the equipment manufacturer. The distributor shall have an available stock of the manufacturer's standard parts. On-the-premises maintenance shall be provided, at no cost to the purchaser, for a period of twelve (12) months from date of completion of installation, unless damage or failure is caused by misuse, abuse or accident.

PART 2 – PRODUCTS

2.01 SYSTEM GENERAL

- A. The equipment furnished under this specification shall be the standard product of one manufacturer and shall be equal in performance and quality to that manufactured by Rath Area of Refuge.

2.02 COMMAND CENTER / MASTER CONSOLE

- A. The Command Center shall be Rath Model 2500-16RC, 2500-56RC, 2500-112RC (16, 56, 112 remote station capability respectively) or approved equal and shall provide two-way voice communication between the Master Console and the Remote Call Stations. The Master shall be capable of mounting on a desk or a wall.
- B. The Master Console shall incorporate: High impact, flame-retardant ABS telephone handset, built-in microphone, backlit display LCD panel
- C. The Master Console shall indicate the name and number of the calling station on its LCD display. It shall be possible to page a group of up to 10 Remote Call Stations.
- D. Directions for use shall be posted at the master control in the school.

2.04 MAIN CONTROL

- A. The Main Control shall be a Rath Termination Module with battery backup, or approved equal. Main Control shall provide signal control electronics, audio amplifier, and line power supply for the system. Main Control shall be

equipped with quick disconnect circuitry. Built-in diagnostic shall indicate wiring or component failure. Non-volatile program memory shall eliminate the need to reprogram the system if power is disconnected. The unit shall be capable of being rack/cabinet mounted or countertop surface mounted.

- B. The Main Control shall be equipped with diagnostic indicators to identify system failure.
- C. The Termination Module shall be powered by the Rath model RP7700104 power supply. It shall require 120vac power and provide battery back-up capable of providing a minimum of 3 hours of electrical back-up in case of building power failure.

2.05 HIGH SECURITY REMOTE CALL STATIONS

- A. The High Security Remote Call Stations shall be Rath Model 2400-805SP or approved equal and shall be equipped with a loudspeaker/ microphone. The speaker shall provide for communication between the Master Console and the Remote Call Station. A stainless steel momentary pushbutton switch shall provide the means for placing a call on the system.
- B. The Call Stations shall be capable of being flush or surface mounted. The faceplate shall be constructed of stainless steel panel and equipped with tamper-proof hardware. The unit shall be suitable for flush wall mounting.
- C. The call-for-help button on the remote station has to be permanently labeled “HELP”;
- D. Directions for use shall be posted at each remote station.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install products in accordance with manufacturer’s instructions.
- B. Install remote station with operating switch at 48 inches above finished floor.
- C. Install wiring with plenum rated cable. Cable routing shall be perpendicular to or parallel to structural building members, and shall utilize a metal bridle ring type support system attached to structural building members only. Mounting cable to other building systems (fire protection, electrical conduit, mechanical ductwork, etc.) or running cable in any fashion other than described, is strictly forbidden.
- D. Provide panel breaker locks for all electrical circuits for fire alarm and detection control equipment panels. Fire alarm and detection circuit breaker locks shall be color coded red.

3.02 FIELD QUALITY CONTROL

- A. Test in accordance with NFPA 72, District, State, and Authority Having Jurisdiction (AHJ) fire department requirements.
- B. Provide seven (7) day prior notice to the Engineer and District personnel for scheduled contractor pre-testing of the system.
- C. Provide three (3) day prior notice to the Engineer and District personnel for the scheduled Authority Having Jurisdiction (AHJ) testing of the system.
- E. Provide three (3) original copies of Certificate of Completion Form. One for the District, one for the Authority Having Jurisdiction (AHJ), and one for the facility’s Fire Alarm System Logbook.

3.03 FIELD SERVICES

- A. Prepare and start systems.
- B. Demonstrate normal and abnormal modes of operation, and required responses to each.
- C. Provide two (2) hard copies and two (2) electronic copies in CD or flash drive format of the final system programming. One set to be delivered to the District Project Manager for the District Central Reporting System, and one set to be left inside the facility’s Fire Alarm System logbook.

3.04 TRAINING OF PERSONNEL

- A. The facility's Staff shall be thoroughly instructed in the use of the Jeron Pro-Alert 480 Intercom System by an authorized distributor of the manufacturer.
- B. The system supplier shall provide instruction to the staff by means of a portable demonstration system, which shall be set up in a conference room or auditorium to give the staff hands-on experience without disrupting normal duties.
- C. The demonstration system shall include representative components as utilized in the installation. The instructor shall demonstrate the functions of the system with all indicators and tones operational.

END OF SECTION 28 26 00