

SECTION 28 31 20 – AREA OF RESCUE ASSISTANCE SYSTEM

PART 1 - GENERAL

1.1 CODES AND STANDARDS

- A. ADA: It is the intent of these specifications to furnish and install a rescue assistance system that meets the requirements of the Americans with Disabilities Act (ADA).
- B. NEC: The system shall be installed in conformance with the currently adopted edition of the National Electric Code (NEC).
- C. IBC: The system shall meet the currently adopted edition of the International Building Code, include all applicable referenced standards.

1.2 DESCRIPTION OF WORK

- A. It is the intent of this section to describe the minimum requirement for providing an Area of Rescue Assistance as described in the American with Disabilities Act. The system shall include rescue assistance stations, main entry control center, power supplies, amplifiers, battery back-up, conduit, wire, outlet boxes and any other items required for a complete and operational system.
- B. The system shall consist of a Master Rescue Assistance Panel (MRAP) located at the front entrance of the facility at a location that is readily accessible to reporting Emergency Personnel. Remote rescue assistance stations (RRAS) shall be installed as follows:
 - 1. At elevator lobbies in fully sprinklered building.
 - 2. Where Areas of Refuge are indicated on the Architectural drawings.
 - 3. Where indicated on the drawings.

1.3 OPERATION

- A. The main rescue assistance panel shall include the following:
 - 1. One alternate action switch with two internal LED indicators for each RRAS. Each switch shall be labeled to clearly indicate the RRAS location.
 - 2. Built-in speaker/microphone.
 - 3. "Push-to-talk" pushbutton switch.
 - 4. Reset "ALL ZONES" pushbutton switch.
- B. The remote rescue assistance station units shall include the following:
 - 1. Built-in speaker/microphone.
 - 2. Red "Push for Help" pushbutton switch with built-in LED. The wiring for the pushbutton switch between the RRAS and the MRAP shall be electrically supervised. A break in the wiring shall cause a trouble indication on the MRAP.
 - 3. Stainless steel plate.

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- C. The actuation of the RRAS shall cause the following operation:
 - 1. Steady red LED and an intermittent tone at the MRAP.
 - 2. Illuminates the Red Pushbutton and sounds a onetime tone at the RRAS.
 - 3. Acknowledging the alarm at the MRAP activates the intercom and causes a flashing red LED on the MRAP and a steady green LED on that zone.
 - 4. RRAS red pushbutton changes to flashing and a second acknowledgment tone.
 - 5. Two-way communication can occur by depressing the "Push-to-Talk" button on the MRAP. RRAS operates hands free.
- D. The system is reset by pushing the MRAP reset switch. If additional alarms are present, the above procedure will repeat until all alarms are acknowledged.
- E. The stations shall be located on wall in stair landing, at locations shown on drawings.

1.4 EQUIPMENT SUPPLIER

- A. Rescue Assistance System shall be supplied by a company that has proven experience in providing these systems for a minimum of three (3) years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Cornell. (Basis of Design)
- B. Gai-Tronics.
- C. Rath.

2.2 RESCUE SYSTEM EQUIPMENT

- A. MRAP: Cornell Model A42XX series with required zones plus a minimum of two (2) spares. The unit shall be flush mounted with anodized aluminum finish. Provide surface box where required to mount unit surface. Provide at the main control unit, a framed and clear plastic-coated protected floor plan sketch 8-1/2" x 11" for each floor indicating location of each remote area rescue assistance.
 - 1. Telephone Access Kit: Cornell Model TAK-4202 programmable auto dialer to provide automatic phone call in the event the MRAP is not attended. Provide a phone line from the nearest closet.
 - a. Coordinate with owner to provide DTA as required for IP based phone systems.
 - 2. Power Supply: Model C5243 with battery backup for a minimum of four (4) hours operation during normal power failure. Termination Cabinet: Provide a surface-mounted cabinet that contains the power supplies, amplifiers and terminal strips for all connections between the rescue assistance stations, master control unit, fire alarm system and system power. Connect cabinet to local 120V unswitched power.
- B. RRAS: Cornell Model 4201 series mounted on a stainless-steel plate for flush mounting.

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- C. Identification Signs: Provide at each RRAS location a lamacoid sign. The signage shall indicate instructions on the use of the RRAS units in both English and braille. The signs shall be a minimum of 12" wide and 8" high, finished in handicap blue color and include the handicap symbol. Large white letters shall provide the instructions. Locate per applicable codes.
- D. Illuminated Signs: Provide at each RRAS location a 120/277V LED lit sign meeting NFPA and ADA requirements. Locate per applicable codes. Connect sign to local exit sign circuit. Where exit signs are battery powered, Illuminated ARA sign shall also be battery powered. **Coordinate with the AHJ the verbiage of the sign to ensure compliance with NFPA and building local codes.**
- E. Door Signs: Provide at the door to each RRAS location a lamacoid sign meeting NFPA and ADA requirements. Locate per applicable codes. **Coordinate with the AHJ the verbiage of the sign to ensure compliance with NFPA and building local codes.**

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install system in accordance with ADA and other applicable codes. Install equipment in accordance with manufacturer's written instructions.
- B. Wiring Methods: Install wiring in raceway except within consoles, desks, and counters, and except above accessible ceiling spaces, and in gypsum board partitions, where cable wiring method may be used. Use UL listed plenum cable in environmental air spaces including plenum ceilings.
- C. Install all signage in NFPA and ADA approved locations.
- D. Confer with the Authority Having Jurisdiction to determine the following:
 - 1. If the AHJ agrees, connect the MRAP to the fire alarm system so that the system is disabled until the fire alarm system goes into alarm.
 - 2. Coordinate with the AHJ and Owner what phone numbers to program into the auto dialer as well as the delay prior to the call out.
- E. Install call stations so that call button is no more than 48" above finished floor.

3.2 WIRING

- A. Wiring connections shall be made by the Contractor as shown on drawings furnished by the representative of the equipment manufacturer. Power shall not be applied to the system until the representative of the manufacturer has approved the connections to the control equipment.
- B. The system shall be installed in a manner approved by the Uniform Construction Code and the National Electric Code utilizing approved raceways or approved fire alarm plenum-rated cable.
- C. Wiring Within Enclosures: Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars.
- D. Identification of Conductors and Cables: Use color coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams.

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3.3 GROUNDING

- A. Provide equipment grounding connections for security systems as indicated. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounds.
- B. Ground equipment, conductor, and cable shields to eliminate shock hazard and to minimize to the greatest extent possible, ground loops, common mode returns, noise pickup, cross talk, and other impairments. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide services of a factory authorized service representative to supervise the field assembly and connection of components and the pretesting, testing, and adjustment of the system.
- B. 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 satisfactory performance and conditions are achieved.
- C. Testing: Upon completion of pretesting, notify the Architect a minimum of ten (10) days in advance, of acceptance test performance schedule and conduct tests in his presence. Provide a written record of test results.
- D. Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system.
- E. Schedule training with Owner with at least seven (7) days advance notice. Notify Architect of training.

END OF SECTION 28 31 20