PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section specifies the furnishing, installing, and testing of a complete two-way emergency communications system for rescue assistance to be installed at *FACILITY NAME*. The system outlined here is to include all necessary devices that provide the functions listed in this specification.

1. Rescue assistance system and wiring shall be furnished and installed by this contractor.
2. Provide a raceway system and backboxes. Minimum size of conduit shall be ¾ inch, unless noted otherwise. Extend ¾ inch conduit up to above corridor accessible ceiling. Where devices are indicated to be installed in plaster ceilings, provide conduit to accessible ceiling space. All raceways shall comply with all preceding specification requirements relative to raceways and fittings.
3. Cables supported and tied within cable tray as required, to obtain an installation neat in appearance. Cables shall be tagged with identification labels.
4. Furnish 120 AC volt circuit to power the Main Control cabinet as indicated on the drawings.
5. Install wiring per manufacturer’s representative’s shop drawing submittal.
6. Maintain record drawing of any wiring installation that deviates from shop drawing submittal.

1.3 REFERENCES

A. Underwriter’s Laboratories UL-2525 current release

B. NFPA – National Fire Protection Association

C. NEC – National Electrical Code - NFPA 70

D. ADA – Americans with Disabilities Act

E. EIA – Electronic Industry Association

F. International Building Code (IBC)

1.4 QUALITY ASSURANCE

A. Qualifications:

1. The systems shall be the product of a manufacturer or an agency experienced in such work.
2. All items shall be of the latest technology, no discontinued models or products are acceptable.
3. Installer Qualifications: Manufacturer's Authorized Representative who is trained and approved for installation of units required for this project.
4. The Manufacturer or the Authorized Representative shall provide proof that within 60 miles of the project they maintain:
   a. A full complement of parts to support the installation.
   b. Offer service by fully trained and qualified technicians during normal working hours.
   c. Will supply parts and service without delay and at a reasonable cost.

B. Regulatory Requirements:

1. Electrical Components, Devices, and Accessories: Listed and labeled according to UL2525 by Underwriters Laboratories and marked for intended use. Proof of UL2525 listing shall be made by submitting the UL listing describing the equipment by model number, with the bid documents.
2. All components and the system 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.
3. The system shall conform to the requirements stated in the current Americans with Disabilities Act (ADA). The power transformer shall be listed by Underwriters Laboratories Inc.
4. Systems may be subject to inspection and require accreditation from the Authority having Jurisdiction (AHJ). Suppliers of all systems must include all documentation and staff to support the owner during these inspections and certifications.

1.5 SUBMITTALS

A. Any supplying contractor proposing equipment which is not the base standard for this specification must provide full submittals at the time of bid. This option shall be exercised at the discretion of the OWNER/specifying authority.

B. Prior to submission of bid, the supplying contractor shall submit six (6) complete submittal sets. Each set shall consist of the following:

1. Product Data: For each type of product indicated.
2. Shop Drawings: Detail the system including the following:
   a. Cabling Diagrams: Single-line block diagrams showing cabling interconnection of all components for this specific equipment. Include cable type for each interconnection.
   b. Wiring Diagrams: Power, signal, and control wiring.

c. Station Installation Details: For built-in equipment; dimensioned and to scale.
d. Equipment Cabinet Drawings: Dimensioned and to scale.

3. Manufacturer’s Warranty Statement.

4. Field Tests Reports and Observations: Include record of final adjustments certified by Installer.

5. Operation and Maintenance Data to include installation, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
   a. Operating instructions.
   b. Troubleshooting guide.
   c. Wiring diagrams and terminal identification.
   d. Equipment parts list.
   e. Product data for types and sizes of wires and cables used.

1.6 WARRANTY AND SERVICE

A. Provide manufacturer two (2) year warranty for the two-way emergency communications for rescue assistance system.

B. The contractor shall guarantee availability of local service by factory-trained personnel from an authorized distributor of the equipment manufacturer. The distributor shall have available a 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 (24) months from date of completion of installation, unless damage or failure is caused by misuse, abuse or accident.

C. On the premises demand service at other than normal working hours shall also be available and may be charged for by the manufacturer's distributor at the prevailing labor rates.

PART 2 - PRODUCTS AND FUNCTIONAL REQUIREMENTS

2.1 MANUFACTURERS

A. Manufacturers: The products specified shall be the standard models of a single reputable manufacturer with no substitutions permitted. Subject to compliance with requirements, provide products by the following:

1. Jeron Electronic Systems, Inc.
   7501 N. Natchez Ave., Niles, Il 60714

B. Product Substitutions: no substitutions permitted.

2.2 SYSTEM REQUIREMENTS

A. Provide a complete turn-key two-way emergency communications rescue assistance system operating as a single integrated solution. Match components and interconnections for optimum performance of all specified functions.

B. All rescue assistance devices shall be UL-2525 listed including the Main Control, Control Console, Remote Call Stations, and associated signage. Any system or components that are not UL2525 listed will not be acceptable.

C. The system shall be a life safety grade design with continuous 24/7 availability without the need for routine rebooting to install updates such as operating system or virus definition updates. As such, the core life safety UL2525 components of the system shall not utilize a Personal Computer, embedded Personal Computer, or commercial operating system vulnerable to software virus attacks. The system shall remain fully operational during any programming with no loss of active calls, active communications, or the need to reboot the system.

D. The system shall be capable of supporting one (1) Control Console and seventy (70) Remote Call Stations.

E. All wiring between the Main Control, Control Consoles, and Remote stations shall utilize standard CAT 5E or CAT 6 cabling and terminations; additional non-category cabling or shielded audio cable shall not be required to each individual room or between any of these components. Systems requiring shielded cable or non-category cabling will not be acceptable.

F. The system shall provide continuous supervision of all devices on the system including: Main Control, Control Console, and Remote Call Stations. Any supervision failure will alarm at the Control Console.

G. All end-devices, including Control Consoles and Remote Stations:

1. May be hot-swapped without needing to power down the local system.
2. Are continuously supervised for data and power with notification of any supervision error.
3. All employ plug-in RJ-45 terminations for simple service or replacement.
4. Are easily cleaned and impervious to common cleaning agents.

H. All system programming and firmware updates use a flexible GUI application for simple on-site or remote administration of all system attributes. All system programming and updates are done through a direct, facility LAN, or remote VPN connection.

2.3 EQUIPMENT AND FUNCTIONALITY SPECIFICATIONS

A. Model 4851-VXT Main Control
Provide as shown on plans. Main Control shall provide the following:

1. Power, voice amplification, signal tones, and multiplex control logic for the associated Control Console and Remote Call Stations.

2. Capacity for up to seventy (70) Remote Call Stations and one (1) Control Console.
3. Call annunciation and two-way voice communication from Remote Call Stations to Control Console.
4. Wiring from Main Control to Remote Call Stations shall utilize a multiplex architecture to minimize cable requirements; systems requiring home-run cabling from the Remote Call Stations to the Main Control shall be unacceptable.
5. Integrated audio amplifier for two-way communication between Remote Call stations and Control Console.
6. If the AC power is lost, continuous system operation with a minimum of twenty four (24) hour battery backed standby and four (4) hour active operation
7. Continuous supervision of Remote Call Stations, including speaker voice coil supervision, with annunciation at the Control Console of any supervision errors of the Remote Call Stations.
8. Diagnostic isolated contact closure outputs for Call, Ground Fault, Power/Console fail, and Station fail.
9. Built-in PBX out-dial annunciation with:
   a. Automatically out-dial to a preprogrammed remote location when a call is placed on the system.
   b. Programmable voice announcement call description to the remote location.
10. Diagnostic LED indicators to indicate power, active calls, call placed, and call received.
11. All Main Control programming and firmware updates use a flexible GUI application for simple on-site or remote administration of all system attributes. All system programming and updates are done through a direct connection.

B. Model 6888 Central Equipment Enclosure
Provide as shown on plans. Central Equipment Enclosure shall Provide the following:

1. Secured wall-mounting of associated Main Control.
2. Heavy 16-gauge steel construction with backed-on beige powder coat finish, one-piece piano hinger and lock.
3. Included subplate for easy mounting of Main Control.

C. Model 4875-V Control Console
Provide as shown on plans. Each Control Console shall provide the following:

1. Secured flush wall-mount design.
2. Backlit alphanumeric display of calling Remote Call Station’s floor and area with associated alert call tone.
3. Display up to eight (8) active calls from Remote Call Stations with the ability to scroll to view and answer additional active calls.
4. Handset privacy communication from Control Console to calling Remote Station. Auto-answer of an active call from a Remote Call Station by lifting the Control Console handset.
5. Programmable Remote Call Station name/location display at Control Console.

6. Ability from the Control Console to one-way page to active Remote Call Stations.
7. Canceling a call from a Remote Call Station shall only be possible after acknowledging the call at the Control Console.
8. Spill-proof membrane keypad.
9. Supervised handset.
10. Associated operation signage explaining active call display, answering calls, one-way paging and call upgrade operations.
11. For acknowledging and answering Remote Call Stations calls, the Control Console will:
    a. The attendant shall acknowledge the call by lifting the handset.
    b. When the call is acknowledged at the Control Console, at the Remote Call Station the green Call Placed LED shall remain lit, the red Monitor LED on shall light steadily, and an alert tone shall sound.
    c. The LCD display on the Control Console shall show the number of the selected station and “CONNECTED”, indicating that voice communication between the Control Console and the Remote Call Station exists.
    d. If an acknowledged call is placed on hold at the Control Console, the Remote Call Station green LED indicator shall flash, the red LED shall extinguish, and a pulse tone shall sound every two seconds.
12. To Cancel Calls at the Control Console
    An incoming call from a Remote Call Station shall only be canceled from the Control Console after it has been acknowledged. After the call has been canceled, the LED indicator extinguishes and communication is terminated.

D. Remote Call Station
Provide as shown on plans. Each station shall provide the following:

1. Available in either a 2-gang or 3-gang configuration
2. 11-gauge stainless steel construction with flush mount design.
3. Continuous supervision of Remote Call Stations, including speaker voice coil supervision, with annunciation at the Control Console of any supervision errors of the Remote Call Stations
4. Momentary action, mushroom-type, red metal call button
5. Integrated status indicators with associated silk-screened designations:
    a. Blue power LED
    b. Red audio monitor LED
    c. Green call placed LED
6. Hands-free communication with Control Console via handset with a maximum listen audio level greater than seventy (70) dB @ 1 meter.
7. Plug-on RJ-45 field wiring connections.
8. Associated operation signage explaining Remote Call Station operation and status LED indicators.
9. To place 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:
    a. The Remote Call Station's green call placed LED indicator shall light steadily.

b. An alert tone shall pulse once at the Remote Call Station to verify call placement on the system.
c. The display at the Control Console shall show the location of the calling station by floor and area and an alert tone shall sound.

PART 3 - EXECUTION

3.1 INSTALLATION

A. To comply with UL 2525, the Main Control and Control Console must be located in an access-controlled area.

B. Wiring Method: to comply with UL 2525, all cabling must be installed in metallic conduit.

C. Install cables without damaging conductors or jacket.

D. Do not bend cables, in handling or in installing, to smaller radii than minimums recommended by manufacturer.

E. Pull cables without exceeding cable manufacturer's recommended pulling tensions.

1. Pull cables simultaneously if more than one is being installed in same raceway.
2. Use pulling compound or lubricant if necessary. Use compounds that will not damage conductor or insulation.
3. Use pulling means, including fish tape, cable, rope, and basket-weave wire or cable grips that will not damage media or raceway.

F. Wiring within Enclosures: Provide adequate length of conductors.

G. Identification of Conductors and Cables: Retain 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. Label stations, controls, and indications using approved consistent nomenclature.

H. Category-5 or better wire termination will be connectorized according to ANSI Standard T568A.

I. Grounding Provisions: Comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems."

3.2 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: A factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Test Procedure: Comply with the following:

1. Schedule tests a minimum of seven (7) days in advance of performance of tests.

2. Report: Submit a written record of test results.

3. Operational Test: Perform an operational system test, and demonstrate proper operations, adjustment, and sensitivity of each Remote Call Station.

C. Retesting: Rectify deficiencies indicated by tests and completely retest work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets these Specifications and complies with applicable standards. Report results in writing.

D. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified.

3.3 TRAINING

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.

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.

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.

3.4 DRAWINGS

Provide as built drawings of all installed network components and associated wiring on building plans. Final payment for work will not be authorized unless these drawings are supplied.