PART 1 GENERAL

1.0 The Contractor shall furnish and install all equipment including, but not limited to, outlet boxes, conduit (with pull strings), wiring, telephones, speakers, and microphones as shown on the plans, and all other equipment necessary to provide a complete and operating system for the ________________ Project.

1.1 Equipment supplied by Simplex Time Recorder Co. shall be considered as meeting these specifications and as the base bid. Any alternate system must be approved by the specifying authority. Bidders supplying an alternate system must make the authority aware of their intentions and provide adequate information, including catalog cuts, working and shop drawings, and a demonstration of the proposed system at least 10 days prior to bid date. Any prior approval of an alternate system does not exempt the supplier from meeting the intent of these specifications. If the alternate system fails to provide all the requirements specified in this document, the Contractor shall be responsible for all costs associated with the removal and replacement of said equipment.

SUBMITTALS

1.2 Data sheets shall be provided on all equipment being provided.

1.3 Internal control cabinet drawings showing internal block diagram connections shall be provided.

1.4 Wiring diagrams showing typical field wiring connections shall be provided.

QUALIFICATIONS

1.5 The Contractor shall be from an established and locally run business which has been operating in the area for a minimum of five years.

1.6 The Contractor shall show evidence that he maintains a service organization and parts inventory to adequately support the supplied equipment.

MAINTENANCE SERVICE

1.7 The Contractor shall provide a one-year guarantee of the installed system against defects in material and workmanship. All labor and materials shall be provided at no expense to the Owner. Guarantee period shall begin on the date of acceptance by the Owner or engineer.

1.8 A maintenance contract offering continued factory authorized service of this system shall be made available if requested by the Owner.

QUALITY ASSURANCE

1.9 The Contractor shall currently maintain a locally run business for a minimum of five years and shall be an authorized distributor of the supplied equipment with full warranty privileges.

1.10 The Contractor shall maintain at his facility the necessary spare parts in the proper proportion as recommended by the equipment manufacturer to maintain and service the equipment being supplied. This facility shall be available for inspection by the engineer.

1.11 The supplying Contractor shall have attended the manufacturer's installation and service school.

1.12 The Contractor shall furnish manufacturer's manuals of the completed system including individual specification sheets, schematics, inter-panel and intra-panel wiring diagrams. In addition, all information necessary for the proper operation of the system must be included. Any bidder using other than the specified equipment must provide this information at least 10 days prior to bidding.

1.13 Record drawings that include any changes to wiring, wiring designations, junction box labeling and any other pertinent information shall be supplied upon completion of project.
IN SERVICE TRAINING

1.14 The Contractor shall furnish a minimum of two hours of in-service training with the system. These sessions shall be broken into segments that will facilitate the training of individuals in operating station equipment, administrative devices, user programming functions, and program distribution equipment. Operating manuals and users guides shall be provided at the time of the training.

WIRING

2.26 System wiring shall be in accordance with good engineering practices as established by the EIA and NEC. Wiring shall meet all established state and local electrical codes. All wiring shall test free from opens, shorts and grounds.

2.27 Use CAT III UL Listed Cable or equivalent. Home run all station wiring in individually jacketed cable.

PART 2 PRODUCTS

2.0 The installation shall include a comprehensive programmable microprocessor based communications system consisting of a central switching exchange capable of handling up to 96 remote stations.

2.1 All programmable functions shall be located in EEPROM memory to prevent loss in a power failure condition. Programming shall be accomplished via a Microsoft Windows® based PC programmer that can reside on customer’s administrative personal computer (IBM AT or compatible).

2.2 The central switch shall utilize standard dual tone multi-frequency type decoding (DTMF) for conformance with standard telephone practices.

2.3 The central switch shall provide an RS-232 port for connection of on or off site programming and or diagnostics. It shall be possible for the user with a personal computer (IBM AT or compatible) to access and change all system parameters as necessary and to save complete system architecture on its storage medium.

2.4 Provide a six (6) watt amplifier circuit for each group of six remote stations to allow flexibility for simultaneous paging, background music and time tone schedules. Equipment requiring a single power amp for these functions shall size such an amp as to deliver a minimum of 1.5 watt per station. Additional power will be required for hallway speakers, outside horns and common areas.

2.5 Facilities for a printer output to create a log of system activity.

2.6 The system shall be provided with one (1) multifunction port for connection to an administrative phone and/or any loop start trunk port of a key or PBX telephone system. Provide a minimum of one PBX port interface as part of this basic specification.

2.7 One (1) unrestricted audio path for private communication between the administrative phone and staff stations, program distribution and paging.

2.8 Provide one (1) direct dialing, two way voice amplified intercom link with handsfree control. Voice amplifier used for handsfree talkback shall employ an audio equalization circuit to compensate for station speakers that are located in acoustically poor environments. Systems that do not have equalization for talkback speaker circuits shall not be accepted.

2.9 Provide six (6) separate time-tone schedules with a maximum of 256 events. Individual events of each schedule shall be capable of sounding an internally generated tone or multiple externally generated tones.

2.10 Capability of background music selection to any group of six (6) staff speakers.

2.11 Sixteen (16) paging groups with all call capability, plus emergency all-call override. Paging into any group or group combinations shall not interrupt any background music previously selected. If the speaker groups receiving program are part of the page group the background music shall be interrupted during the page and returned automatically when the page is completed.

2.12 Built in signaling tone.

2.13 One (1) to four (4) digit programmable architectural room numbers staff station locations.

2.15 Integral internal program clock for time tone distribution. It shall be possible to synchronize the program clock from an external master clock.

2.16 Enhanced Caller I.D. information containing the architectural room number/name, and call priority.
2.17 Discriminating ringing to distinguish different levels of incoming calls.

2.18 Single tone page or intercom.

2.19 Call confirmation tone at the intercom speaker location when a call is placed. This tone verifies that the call has been placed into the system queue. A second confirmation tone shall be activated if the call is upgraded to an emergency call. Equipment which does not notify the caller that the system has accepted the upgraded call will not be accepted.

2.20 The administrative telephone shall be a standard DTMF set. Any system requiring a "smart" or proprietary type instrument will not be acceptable. The following features will be provided by the administrative telephone:

2.20.1 Speaker and microphone for handsfree communication. Administrative phones requiring a push to talk switch will not be accepted.

2.20.2 Dialing directory that stores up to 50 names and numbers.

2.20.3 Eight (8) single touch programmable function buttons for frequently dialed functions, page groups, time-tone schedules, program distribution, etc.

2.20.4 Mute function for privacy.

2.20.5 Enhanced Caller ID compatible.

2.20.6 Hearing aid compatible handset.

2.20.7 Last number redial and menu redial of the previous eight numbers dialed.

2.20.8 Ringer tone selection with adjustable ringer volume.

2.20.9 Handsfree speaker volume control.

2.21 The staff station call-in assembly shall be a momentary contact spring return type switch and an integral volume control mounted to a stainless steel single gang plate. This volume control shall compensate for varying room sizes and acoustical conditions. The groups of six (6) call-in switches shall be capable of 3 different classes of service:

2.21.1 Normal only - Normal calls are initiated when activated.

2.21.2 Normal/Emergency - One (1) button press activates normal call, four (4) button presses activate emergency call.

2.21.3 Emergency only - Emergency calls are initiated by simply depressing the call-in switch.

2.21.4 Last four station locations on the main unit shall be capable of low priority calls, with an integral associated relay for door release control capability.

2.22 The staff station speaker shall be an 8" dual cone design with a minimum frequency response of 30Hz-18kHz. It shall have a minimum voice coil diameter of 3/4", a 5 ounce magnet and be capable of handling 10 watts of program power. Any system requiring a line matching transformer for each staff station location will use a transformer of such quality that a minimum frequency response of 60Hz-12kHz will be provided.

2.23 Capabilities for a privacy position on the call-in switch to prevent monitoring.

2.24 Weatherproof outside paging loudspeakers shall have a minimum power rating of five (5) watts. The speaker shall have a minimum frequency response of 275-14kHz and a dispersion angle of 120 x 60 degrees.

2.25 Provisions for the automatic distribution of paging announcements from a remote microphone. Keying the microphone shall automatically mute all other audio sources and transmit the microphone signal to all rooms.

2.26 The program source for background music shall be a program control panel with integral combination AM/FM/Cassette tape player. The control panel shall also have an integral high performance 3” speaker to allow review of the audio source, and a 10 segment LED display to allow visual monitoring of system volume levels. Provide appropriate wall or desk mounting of this device as shown on drawings.
PART 3 CABLES

3.0 All cable shall be as recommended by the manufacturer or an approved exact equivalent. All station wiring must be home run with individually jacketed cable. Use CAT III, 22AWG, UL Listed Cable.

3.1 All interior staff station wiring shall be in accordance with current new construction wiring guidelines published by the manufacturer, including staff speaker and call switch.

3.2 All interior Administrative phone(s) shall be wired in accordance with current new construction wiring guidelines published by the manufacturer.

3.3 All amplified speaker circuits shall be connected using two (2) twisted pairs. One pair for line level audio and one pair for 24 VDC power. Gauge of wire is dependent on line lengths and is shown on the prints.

3.4 All constant voltage speaker circuits shall be connected using a twisted shielded pair. Gauge of wire is dependent on line length and is shown on the prints.

3.5 Transient suppression is required on all wiring leaving the building

3.6 All cables run in underground conduits must be suited for wet locations.

PART 4 INSTALLATION

4.0 Complete system shall be installed in strict accordance with manufacturer's recommendations.

4.1 All wiring shall be installed in raceways where routed through plenum ceiling areas.

PART 5 INSPECTION AND TEST UPON COMPLETION

5.0 Check-out and final connections to the 5105 system shall be made by a factory trained technician in the employ of a manufacturer of the products installed. In addition, factory trained technicians shall demonstrate operation of the complete system and each major component to the Owner.

5.1 System field wiring diagrams shall be provided to this subcontractor by the system manufacturer prior to installation.

5.2 All materials and installation shall be guaranteed to be free of defects in material and workmanship for one year after final acceptance of installation and test.

5.3 Upon completion of the installation, four (4) copies of complete operational instructions shall be furnished, complete with record drawings. Instructions shall include part numbers and names, addresses, and telephone numbers of parts source. Final payment shall not be made until operational manuals have been received.

5.4 Upon completion of the installation of the equipment, the electrical contractor shall provide to the engineer a signed statement form the equipment supplier that the system has been wired, tested, and functions properly according to the specifications.

5.5 Nothing herein contained shall be construed to relieve the Contractor from furnishing a complete and acceptable electrical wiring system in all its categories. The engineer will condemn and reject any materials or labor which are or may become detrimental to the accomplishment of the intentions of these specifications.