

SECTION 17000
SECURITY ELECTRONICS, GENERAL

PART 1 - GENERAL

1.01 SUMMARY.

- A. This division of the specifications covers the complete security controls, communications and alarm systems as specified herein. The Electronics Systems Contractor (ESC) shall be the single contractor responsible for this and all other divisions covered by the complete contract specification documents and any and all supplementary documents and addenda and shall provide all design, labor, material, equipment and supervision to install the specified equipment and systems for a complete integrated operational security systems package inclusive of any and all equipment to effect a complete and functional system in accordance with and in strict compliance to the complete contract specifications.
- B. A single Electronics Systems Contractor (ESC) being listed as pre-approved or having submitted all the requirements listed hereafter and having been approved by special addendum, shall assume control and accountability for furnishing and installing all systems as specified hereafter using only equipment of pre-approved manufacturers.
- C. The ESC shall be responsible for the total integration and interfacing of the products and systems specified in this section and all other sections in accordance with submittals, which have been reviewed and approved by the Owner.
- D. The ESC must maintain permanent employees under it's hire for positions of project management and trained electronics technicians sufficient to provide the proper service to the defined project throughout the warranty period and a minimum of one (1) year following the warranty period. Response time to a call shall not exceed twenty-four (24) hours in a normal situation or four (4) hours in an emergency situation. Warranty service must be available through a toll free number to the Owner, twenty-four (24) hours a day and seven (7) days a week.

1.02 REFERENCES.

- A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. Underwriter's Laboratories (UL)
 - 1. UL 508 Industrial Control Equipment
 - 2. NEC National Electrical Code (latest edition)
- C. Institute of Electronic and Electrical Engineers (IEEE)
 - IEEE 802.3 CSMA/CD (ETHERNET)

1.03 SCOPE AND RESPONSIBILITY

- A. The scope of work and project responsibility shall consist of the total replacement of the existing door control system and intercommunications system. This includes but is not limited to all control boards, processors, relays, terminals, intercom relays, paging amplifiers, intercom amplifiers and master stations.
- B. Wall mounted intercom stations and their associated cabling from the head end to the station shall remain and be re-used.

- C. Overhead and/or wall mounted paging speakers and their associated cabling from the head end to the speaker shall remain and be re-used.
- D. All existing door hardware including but not limited to locks, door position switches, keeper switches and associated wiring from the head end to the door shall remain and be re-used. Before beginning on-site installation or removal of existing equipment, contractor shall test each lock for proper functionality and submit a report to the owner of deficiencies for owner correction.
- E. The existing CCTV system shall remain as is. This contractor shall be responsible for the interface between the new touch screen control system and the existing CCTV system to affect automatic camera call up to control station spot monitors for intercom and various alarm conditions.
- F. Each Touch Screen Control station shall have an integrated intercommunications master station with speaker, microphone and push to talk.
- G. The Female Control and Booking Control shall have the ability to be transferred, including intercom, to the Central/Male Control station.
- H. Any additional conduits required for this contract shall be the responsibility of the ESC contractor.
- I. The ESC scope of work shall consist of, but not be limited to the following as defined in the details of this division of the specifications and as shown on the plans.
 - 1. 17000 – Security Electronics, General
 - 2. 17120 – Touch Screen System
 - 3. 17140 – Programmable Logic Controller
 - 4. 17150 – Electronic Relay System
 - 5. 17200 – Intercom System
- J. The ESC scope of work shall additionally consist of the following:
 - 1. Raceway and conduit system: The ESC Contractor shall furnish and install any additional conduit and raceways including all necessary conduit, back boxes, wire ways, pull/junction boxes, fittings, straps and connectors required for a complete raceway system for all work contained within this division. Each system requires an independent raceway and conduit system. The ESC contractor shall install the raceway and conduits systems per applicable Sections of the National Electrical Code as applicable at the time of contract award.
 - 2. Furnishing, installing (pulling) and terminating of all wire, wiring and cable where required.
 - 3. ESC contractor shall be responsible for furnishing and installing all equipment, wiring, installation and testing of systems defined in Division 17. The sub-contracting of Division 17 equipment installation shall not be acceptable. The ESC contractor shall be responsible for the design, fabrication, project management, installation and warranty of all systems within this division of work.
 - 4. Complete engineering documents consisting of conduit plans, equipment plans, cut sheets and manuals for a coordinated total system including documentation for submittal, installation, operation and maintenance.
 - 5. Project management on and off site to oversee and supervise all work performed by, for or in coordination with the scope of work by the ESC. Inspection and verification of the site and building prior to installation to insure correctness of structure.
 - 6. Although such work may not be specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a complete and operating system.
 - 7. Furnish and install all necessary power transformation and surge protection required to operate control system equipment and functions.

- K. Acceptable ESC's
 - 1. South Western Communications, Inc., Decatur, AL
 - 2. SimplexGrinnel, Boca Raton, FL
 - 3. United Prison Equipment, Green Lane, PA
 - 4. Grayco Detention Equipment Inc., Surfside Beach, SC
 - 5. Southern Steel, San Antonio, TX

1.04 PREQUALIFICATION REQUIREMENTS

- A. All ESC's must be pre-approved and listed. ESC's not listed as being approved that desire to bid the project must request approval and shall submit the following qualification information to Caldwell County in writing no later than fourteen (14) days prior to bid. Request received after this time will not be considered under any condition. If approval is received, acknowledgment will be by the noted special addendum. Verbal approval will not satisfy the right to bid. Any bids an ESC not listed will not be considered and will be thrown out as a non-qualifying bid. All ESC's shall submit all information exactly as herein requested or approval will not be considered. Disqualification shall immediately exist if the request is submitted in a manner inconsistent and or incomplete as requested following. Disqualification shall also exist if in the opinion of the Owner, the information submitted is inaccurate or does not satisfy the qualification requirements.
- B. Caldwell County reserves the right to disqualify and or not approve any ESC for any reason if they deem it to be in the best interest of Caldwell County.
- C. The ESC shall be a true systems integrator specializing in the design, manufacture, installation and servicing of integrated security electronics and communication control systems for the corrections market.
- D. The evaluation of each perspective ESC's qualifications will be strictly and solely based on the qualification proposal. The proposal's format must be on a paragraph-by-paragraph basis to the items listed following:
 - 1. Provide a history of the company that reflects accurately the length of time the company has been licensed and performed services of an ESC. The company shall have been in business under and incorporated under the name submitted in the proposal for a minimum of ten (10) years. For companies with multiple offices, the proposal must contain information based only on the location that will be responsible for the entire management and operations for this project from award of bid through the warranty period.
 - 2. Provide an organizational chart to include the names and positions of the Project Manager, Engineering Manager, the principal Project Engineer, the Project Programmer(s), the Manufacturing Manager, the Project Superintendent, the Lead Technician, all Field Technicians and Technical Support Staff that are to be assigned to this project.
 - 3. For each of the individuals listed in the organizational chart, provide complete resumes and a delineation of each individual's responsibilities for this project. The resumes must include information about the individual's education, electronics systems detention experience, systems integration capabilities, factory training and certification and the length of time employed by the ESC. Provide a copy of each individual's manufacturer's certificate of certification for all systems, equipment and software for which each individual that will be involved.
 - 4. The ESC must employ and provide the names and resumes of the following resident staff personnel in its employ and such individuals must have oversight of the project. The resumes shall include the same information as listed in paragraph 3 above plus a copy of the certificates of certification required for each:

- a. A Microsoft Certified Professional.
- b. A UL Trained Applications Engineer.
5. Provide a list of the ten (10) most recently completed **jail system** projects involving the major systems similar to those described in these specifications for which the ESC has been the integrator and having furnished and installed. Each project shall be of the size, complexity and requirements of this project and must have been in successful operation for a minimum period of three (3) years. If more than ten (10) projects are listed, only the first ten (10) will be reviewed. Provide the following information for each project:
 - a. Project name and location.
 - b. Date project was completed.
 - c. Total project value.
 - d. Contract amount to the ESC.
 - e. Names of the ESC's Project Manager, Principal Project Engineer and Field Superintendent.
 - f. Name and telephone number of Architect if applicable.
 - g. Name and number of the Security Consultant.
 - h. Name and number of the Architect's Project Manager and Site Project Engineer.
 - i. Name and number of an individual (preferably the maintenance manager) at each facility who is familiar with the operation, performance and maintenance of the facility's security electronic system. Reference must be current or the ESC will be considered non-responsive.
 - j. List and description of all systems on the project and the approximate value of each. System values must exceed the following amounts for at least two (2) of the projects:
 - 1) Touch Screen Door Control System - \$100,000
 - 2) Intercommunication System - \$100,000
 - 3) Video Surveillance System - \$100,000
 - 4) Programmable Logic Controller - \$100,000
6. Provide a list of all current projects, which the ESC is the integrator and is furnishing and installing. Provide the following information for each project:
 - a. Project name and location.
 - b. Date project was started.
 - c. Total project value.
 - d. Contract amount to the ESC.
7. Provide a list of all projects, which the ESC was involved in any form of litigation. Provide the following information for each project:
 - a. Project name and location.
 - b. Date project was started or completed.
 - c. Total project value.
 - d. Contract amount to the ESC.
8. Provide a list of all projects, which the ESC was assessed liquidated damages, even those projects for which the ESC did not have to pay a claim. Provide the following information for each project:
 - a. Project name and location.
 - b. Date project was started.
 - c. Total project value.
 - d. Contract amount to the ESC.

9. Provide a current independently audited and certified financial statement showing a consolidated net worth of \$1,000,000.00.
 10. Provide Microsoft certificate and Microsoft qualification number attesting to the ESC's approval and certification by Microsoft that they are a Microsoft listed and authorized Microsoft Certified Professional.
 11. Provide certificate to attest that the contractor is an ISO 9001:2000 certified company.
 12. The ESC shall confirm in writing that they will have qualified personnel available to be on the project site daily for any and all coordination purposes throughout the total duration of the project. Provide the name(s) and resume(s) and the individual(s).
- E. Systems, equipment and products specified in this division shall be engineered, programmed, manufactured and assembled, installed and serviced by an approved ESC.
- F. All work is to be performed in strict accordance to any and all applicable codes, ordinances, regulations and standards; Federal, state, local and otherwise including but limited to the following:
1. National Electrical Code (NEC), latest edition
 2. National Fire Protection Association (NFPA)
 3. Factory Mutual System (FM)
 4. Electronics Institute of America (EIA)
 5. Underwriters Laboratory (UL)
- G. Provide a statement attesting that the ESC has reviewed the entire set of bid documents and understands the specified system and project requirements.
- H. Provide a riser diagram for each system specific to this project depicting all relevant details and information inclusive of but not limited to equipment layout and locations, conduit routing and sizing, cable and wiring requirements and power requirements.
- I. Provide a narrative description of all software to be used including touch screen, programmable logic controllers, systems management and closed circuit television.
- J. Provide from each manufacturer of each system certification that the ESC and its applicable personnel have been factory trained and certified to manufacture /assembly, install and service equipment contained in each system.
- K. Refer to each individual section of this division of the specification for the list of acceptable manufacturers. If the ESC preparing the proposal desires to request a substitute, he must do so within the confines of these proposal qualification requirements in writing fourteen (14) days prior to the bid date. Manufacturers and equipment substitution proposal request must be submitted noting section, page, paragraph and item with a detailed cross-referencing and comparison. For proposed substitutions submit the following information exactly as requested:
1. Name of manufacturer
 2. Address of manufacturer
 3. Phone number of manufacturer
 4. Trade name
 5. Model and catalog designation
 6. Performance and test data
 7. Referenced standards
 8. Warranties
 9. Material construction
 10. Finish
- L. Electronic components shall be from manufacturers who at present have not less than ten (10) years continuous successful experience in the design and manufacture of the type products required for this project.

- M. In order to meet the high standard requirements for Quality Assurance, **proprietary and custom systems** such as those manufactured by MTI, Icotech, OSS, Simplex, Trentech and or Comtec are not acceptable. Integrators listed as being approved and/or Integrators having been approved by addendum shall use products as specified and defined by these specifications.
- N. The bidder to whom the contract is awarded will be required to furnish a satisfactory surety bond in the full amount of the contract to guarantee faithful performance of contract.
- O. The bidder to whom the contract is awarded shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work by the contractor, his agents, representatives, employees or subcontractors, if applicable.

1.05 SUBMITTALS

- A. General: Submit listed Submittals in accordance with Conditions of the General Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's data sheets for all proposed system components. Submit three (3) copies with all specific items that will be provided clearly indicated and the options highlighted.
- C. Shop Drawings: Complete system Shop Drawings shall be prepared for this particular project which include device layout based on the building floor plan, point-to-point wiring diagram(s), conductor sizes and types, riser diagrams and schematics, theories of operation, full scale color Graphic Panel layout drawings, and full scale color Touch Screen map layouts. Submit three (3) copies for review and approval. Layout shall be based on an actual building floor plan. Drawings shall show all equipment locations and quantities required. A final "as-built" plan layout shall be provided to the Owner upon Substantial Completion of the actual installation.
- D. Materials List: Submit a complete materials list indicating all equipment to be provided as part of this section.
- E. Complete details of equipment mounting configuration.
- F. Manufacturing assembly and testing procedures and forms.
- G. Installation testing and check out procedures and forms to be used by the ESC and the owner.
- H. The conduit plans, equipment plans, riser diagrams, block diagrams and details are to be submitted in the latest version of MicroStation or AutoCad and shall be submitted on a minimum of a 'D' size drawings. Documents submitted in any other manner including marked up sets of the bid documents shall receive immediate rejection and will not be reviewed. A complete set of as built documents will be issued at the completion of the project inclusive of CAD files on CD.
- I. Submittals issued in a manner inconsistent with the requirements of these specifications shall receive immediate rejection and will not be reviewed. Submittals issued containing materials, products and or equipment not listed and approved addendum shall receive by the original bid document specifications or by immediate rejection and will not be reviewed.

1.06 OPERATION & MAINTENANCE MANUALS

- A. The ESC shall furnish three (3) sets of operational and maintenance manuals for all systems furnished. The manuals shall include component list, instructions for care, operation instructions, and instructions for ordering replacement equipment and personnel to contact for warranty work.

B. Record Documents:

1. This Contractor shall supply Record Documents for the entire facility inclusive of existing areas (if applicable), systems and conditions. The as built Record Documents at a minimum shall include control room layouts, equipment room layouts, touch screen control layouts, equipment cabinet layouts(including existing to remain if applicable), theories of operation, wiring diagrams and schematic block diagrams.
2. At the time of project completion, this contractor shall turn over to the owner all original software media and manuals for all programmable systems to include but not be limited to Touch Screen Computers, Programmable Logic Controllers, Intercommunications System and Closed Circuit Television System.
3. At the time of project completion, this contractor shall turn over to the owner all custom programs on permanent magnetic media for all programmable systems to include but not be limited to Touch Screen Computers, Programmable Logic Controllers, Intercommunications System and Closed Circuit Television System.
4. At the time of project completion, all project installed hardware, software and programs becomes the sole property of the owner.

1.07 APPROVALS

- A. Deviations from this specification must be documented in writing to the at fourteen(14) business days prior to the bid date.
- B. Complete catalogue data, product specifications, and technical information on alternative equipment must be provided including all associated cost savings or additions, including but not limited to equipment, equipment installation, power wiring and materials, programming, documentation, and project management.

1.08 DELIVERY & HANDLING

- A. Delivery: Deliver Materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage and Protection: Store materials and equipment in an area protected from harmful weather conditions and at temperature conditions recommended by manufacturer. After initial installation, protect equipment from exposure to dust, dirt, paint, and other contaminants.

1.09 PROJECT CONDITIONS

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings.
- B. Scheduling: Coordinate taking field measurements, fabrication schedule, and deliveries with construction progress schedule to avoid construction delays.

1.10 WARRANTY

- A. Manufacturer's Warranty: All equipment and labor provided under this section is warranted for one (1) year from Substantial Completion or System Commissioning, whichever occurs first.
- B. During the warranty period the ESC shall perform quarterly preventive maintenance inspections on all installed equipment.
- C. Nothing in the above warranty shall apply to material which has been misused, abused as follows; neglect by the owner, defects or damage caused by work or failure of work by others, ordinary wear or normal equipment adjustment.
- D. Additionally, any unauthorized modifications; repairs or tampering shall constitute termination of the warranty.

1.11 TRAINING

- A. The ESC shall provide forty (40) hours of on site training for operational purposes and forty (40) hours of training for maintenance purposes at the turn over of the project.
- B. It is mandatory that the ESC shall set up in their facilities all equipment for the project and shall test each and every component and operation prior to shipping to the project. Test reports as mentioned above shall be provided to the Owner.

PART 2 - PRODUCTS

- 2.01 See Individual Division 17 Specification sections for specific product requirements.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data; including product technical bulletins, product catalog, installation instructions, submittal sketches or drawings, and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that related conditions, including equipment that has been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
- B. All devices connected to equipment specified in this section shall bear the UL, cUL, or CSA label and comply with all applicable National Electrical Code (NEC) standards.

3.03 PREPARATION

- A. All equipment related to the system shall be factory tested before shipment.

3.04 INSTALLATION

- A. Contractor shall furnish all equipment, labor, system setup, and other services necessary for the proper installation of the products/system as indicated on the drawings and specified herein.
- B. Install in accordance with manufacturer's handling and installation instructions.
- C. Install in accordance with all local and pertaining codes and regulations.
- D. All equipment and systems shall be installed by the ESC. Subcontracting of equipment installation shall not be permitted.
- E. Equipment shall be ready to use condition at end of installation.
- F. Energize equipment in accordance with manufacturer's instructions.

3.05 PROTECTION AND CLEANING

- A. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- B. Touch up, repair, or replace damaged components before Substantial Completion.
- C. Remove temporary tags, coverings, and construction debris from interior and exterior surfaces of equipment. Remove construction debris from equipment area and dispose of debris.
- D. Clean integral air filters, heatsinks, grills, and fans before Substantial Completion and Commissioning Services.

3.06 WARRANTY

- A. The ESC shall provide a single source warranty for all supplied equipment specified in this section to be free of defects in material and workmanship for a period of one (1) years from the date of substantial completion.

END OF SECTION 17000