

SECTION 280000 - INTEGRATED SECURITY

PART 1 - GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

- A. All work is to conform with the rules and regulations concerning construction established by the building management as well as Local and national AHJ's.

1.2 CONDUIT CONSTRUCTION

- A. The general contractor shall be providing the necessary building conduits/sleeves for areas that require security devices. These conduit pathways and sleeves must be field verified and coordinated with the general contractor and electrical contractor for the security integrators' work.

1.3 GENERAL

- A. Please refer to all Security drawings showing the scope of work that is consistent with this BID.
- B. Furnish and install all required equipment, material, labor, etc. Necessary to make a complete operating system, to the satisfaction of the owner and consultant.
- C. All equipment shall be installed and adjusted in accordance with the manufacturer's recommendations and as directed by the consultant.
- D. All conduit runs to the devices shall be furnished and installed by the union electrical contractor. Security integrator shall coordinate all conduit requirements with the general contractor and electrician.
- E. Provisions shall be made for connectivity to the client's computer network, as may be needed for remote site connectivity. Furnish and install all necessary patch cables, from the Main Distribution Frame Room/Security Operations Center to the client's computer network.
- F. Furnish and install all hardware as per plans and specifications to make a complete operating system.
- G. Exact location of call cameras, doors and security devices and equipment to coordinated in field with architect and MGE UTC.

1.4 AS-BUILT DOCUMENTATION/ RECORD DRAWINGS

- A. Upon completion of the project, as-built drawings shall be supplied by the contractor showing actual device locations with labeling, rack/ cabinet, head end equipment layout as constructed, along with all field notes as well as all networking connectivity drawings as required by MGE UTC Also included shall be all the conduit and cable run pathways show in plan for the entire system installation.
- B. All as-built records shall be created by the contractor and turned over at the completion of work to the owner and consultant - along with three sets of hard copy and electronic manuals in a tabulated table of contents driven format for ease of use.
- C. Documentation shall be submitted within ten (10) working days of the completion of the installation.

1.5 SHOP DRAWINGS AND CATALOG CUTS/ SUBMITTALS

- A. Before contract close out, submit one (1) copy of the system components, drawings and documents to the consultant for review and approval.
- B. After the as-built drawings are approved by the consultant, the contractor shall submit two (2) approved copies to the owner.

1.6 INTERPRETATION OF DRAWINGS

- A. These design drawings and specifications indicate general arrangement and scope of work. To facilitate the installation and coordination with other trades, the contractor may deviate from the general arrangement so long as the scope does not change.
- B. The drawings are diagrammatic and indicate size and general location of work. Scale dimensions shall not be used. The exact location and elevation of all hardware, etc. shall be determined from the architect's drawings, security integrator shall furnish all necessary hardware, supports, fitting and accessories to fulfill applicable codes, regulations, building standards, and the best practices of the trade for installation.
- C. Any discrepancies between specifications, drawings, field conditions, and the manufacturers' recommendations shall be brought to the attention of the consultant immediately in writing.
- D. The security integrator shall make an allowance to cover whatever work which is required to comply with the intent of the plans and specifications and to provide for a complete and operating system.

- E. Any interpretation, correction or change of the scope of work made in any other manner other than written, will not be binding, and the contractors shall not rely upon such interpretations, corrections or changes, the consultant will issue interpretations, changes or corrections in writing. It is the responsibility of the contractors to determine whether all addenda have been received.
- F. Omission in the proposal of any provision herein described shall not be construed as to relieve the contractor of any responsibility or obligation requisite to the complete and satisfactory delivery, operation and support of any and all equipment or services relevant to the intent of this specification.

PART 2 - CONTRACT REQUIREMENTS

2.1 PROGRAMMING

- A. Coordinate all programming requirements for each of the systems directly with the end user/owner during system configuration.
- B. Provide a written report of all programming requirements for each camera, door device and alarm point and provide to consultant and end user/client for review and approval.

2.3 SYSTEM ACCEPTANCE

- A. Final point to point acceptance testing of the system shall be conducted by the consultant (unless notified otherwise).
- B. Prior to the final acceptance test the security integrator shall conduct a complete test of the entire system and shall provide the consultant with a written report on the results of that test.
- C. Upon written notification from the security integrator that the system is complete and operations, the consultant shall conduct a final acceptance test of the entire system.
- D. Upon successful completion of the final acceptance test (or subsequent punch list retest) the consultant will issue a letter of final acceptance. The warranty period shall begin upon the issuance of the final acceptance letter.
- E. The security integrator shall provide pre and post-acceptance training to the owner and all personnel appointed to operate the security systems. The training will be organized to meet the scheduling needs of the owner. The security integrator shall coordinate with the owner and consultant during the system programming and database development phase of the implementation process.

- F. Upon completion and acceptance of the system installation, the security integrator shall supply the owner and all personnel appointed to operate the security system with twenty hours (in five, four hours sessions) of additional training for the access control and surveillance system surveillance systems.
- G. The security integrator shall provide manufacturer's operating manuals for all components in the security camera/ surveillance system including any warranty information.

2.4 WARRANTY

- A. Security integrator shall warrant the installed system to be free of defects of materials and workmanship. Provide one year warranty on part and labor after date of acceptance.
- B. During the warranty period provide 24 hour service seven days a week.
- C. Service shall be rendered within 4 hours of notification of a problem.
- D. Servicing to include the following:
 - Emergency maintenance service (4 hrs) response time.
 - Replacing defective parts and components of system manufacturer.
 - Servicing by factory trained service representative of system manufacturers.
 - Maintaining of system programming.
 - Incorporating improved system reliability as it becomes available. Direct equipment replacement and wiring changes only after approval by authorized representative. Not to include major system design changes.
 - Regularly schedule preventive maintenance. Submit schedule of tasks and frequency of performance prior to acceptance.
 - Submit periodic maintenance reports to authorized representative documenting routing and emergency maintenance procedures performed during interim. Include detailed description of symptoms, diagnosis and subsequent action taken for emergency maintenance, quantitative analysis of effectiveness of routine maintenance. Include changes in routine maintenance procedures.

2.5 TRAINING

- A. Security consultant shall train a minimum of 3 operators of system operation. The instruction shall be provided by an engineer representing the contractor.
- B. Provide each operator with complete, printed operating instructions and brief sub-system description in manual and electric form.

- C. Provide two training sessions, with minimum training time of one day each (8hrs). Sessions shall be scheduled to suit the requirements and may be at the owner's request.
- D. The owner shall be trained in preventive maintenance.

PART 3 – EXECUTION

3.1 ADDITIONAL INFORMATION TO BE SUPPLIED

- A. List the type of test equipment owned by the security integrator for testing the Unshielded twisted pair copper cables.
- B. Provide information on liability insurance showing coverage limits that your firm carries for various incidents including your technicians on site, delivery of product to the building and staging of material on the job. The successful security integrator will list the client as a co-insured on the policy covering work on the site. The security integrator will supply a hard copy of the certificate of insurance.
- C. It is requested that an organizational chart listing the personnel that will be assigned to the project be provided. We also require a corporate organizational chart that leads up from the assigned field group.
- D. The security integrator should verify all footage using the floor plans that have been supplied with the scope of work by MGE Unified Technologies.
- E. The security integrator must provide the cable run numbers, so that accurate “as built drawings” are available for system warranty and turn over to the client at completion of the station cable termination and testing.

3.2 PROJECT IMPLEMENTATION

- A. Once the work commences the security integrator will meet regularly with the client contact, to keep she or he informed of the job progress. This individual will be considered the security integrator point of contact during the project.
- B. Security integrator is responsible to coordinate the security installation with contractor and all trades including the systems furniture vendor.
- C. Any proposed change of the project scope will be first reviewed with the client contact prior to implementation.
- D. Prior to the security integrator commencing the proposed changes the client contact will first sign off on any change orders or equipment substitutions.

- E. The designated company representatives will initiate requested change orders by the client to the project specifications in writing.
- F. The security integrator must notify the client immediately of any change in personnel/technician, or site foreman that may cause a delay in the project completion date.

3.3 SUMMARY - SCOPE OF WORK

- A. The integrated security systems at this site is to be designed as a complete turnkey integrated system. The security integrator shall supply all the necessary labor and components as necessary to provide for a complete and operating system in accordance with plans and specifications, as well as intent. Any material not specifically mentioned in this specification or not shown on the drawings, but required for proper performance and operation must be furnished, installed and supported by the security integrator.
- B. This new integrated security system, infrastructure and hardware - needs to be able to support not only today's current technology, but must be able to provide an acceptable adequate growth in accordance with industry standard best practices. Also of particular importance, the security integrator provides for a fully integrated complete end-to-end sub system solution among all disciplines. They shall also offer one point of contact for warranty service on all labor and installed component performance for one year.
- C. The access control and surveillance system shall share the same controls for ease of installation and service. The systems shall be fully integrated for physical access control and surveillance, as well as incorporate panic alarm integration to the security center application. Prepare for complete systems customization of system setup based on clients desired operational characteristics – provision for at least 40-80 programming man hours for this task as part of the BID pricing submission.
- D. The successful integrator shall provide for all work stations, servers and hardware as needed, per plans and specifications - and same shall meet as a minimum standard, the manufacturers high performance requirements. Minimum specification performance requirements will not be allowed on this project and the integrator shall make affirmation and presentation that all hardware meets this requirement. The work station locations are as per the bill of materials and will require specific programming from the integrator and the manufacturers professional services team
- E. Archival calculation based on the parameters below shall be provided for the security integrator as part of the scope of work for evaluation and adherence to the requirements – the project bill of

materials has an initial archive calculation as a base starting point – contractor shall be required to authenticate this hardware against their own calculation(s).

PART 4 - EQUIPMENT PERFORMANCE NOTES

4.1 IP BASED SURVEILLANCE SYSTEM

- A. The closed circuit television (surveillance system) system shall be an all color system consisting of IP based cameras and related equipment and shall provide for monitoring and archival recording of multiple cameras simultaneously – as well as have a minimum 90 day recording archive. Integrator shall setup cameras using industry standard parameters for the areas being surveilled and camera capabilities to achieve the archive storage timeframe - please also see section item 'E' below
- B. Provide all required hardware and software to integrate with the access control system for camera call-up capability and full system mapping for access control, surveillance and panic alarms – overlaid on floor plan drawings of the site in the security center instance
- C. Provide ceiling mounted and surface mounted, and/or recessed, elevator and exterior cameras as indicated on the floor plan drawings as applicable, security integrator shall provide costing for all mounting options to provide for an aesthetically pleasing and functional installation.
- D. The surveillance system IP based cameras shall be powered from a point of entry switch provided by the security integrator located in the racks in the server, IDF and node locations as shown on the riser diagram, details sheets and in circumstances where the runs exceed 300', a longspan or similar network device shall be used. It is incumbent upon the integrator to provide for a necessary power for all cameras in a manner consistent with the intent of the specification.
- E. The system archive server shall be able store 90 days of storage (minimum) - integrator to provide for all calculations on all hardware for consultant review. All cameras shall be minimum 12fps for 24/7 recording. Please provide for a value engineering calculation for event based recording still achieving the intent of the specification and archive storage timeframe.
- F. All software support for one year to be included in base system pricing.
- G. Integrator shall also provide for all mounting hardware as needed for all cameras in all areas for a coordinated workmanlike installation.
- H. All final camera views and recording schedules shall be coordinated with the building security/operations team and consultant. Successful bidder shall provide for a full excel spreadsheet matrix of all cameras showing:
 - Camera model

- Camera type
- Camera name
- Camera location
- Camera number
- Camera mac address
- Camera IP address
- Camera switch and port termination
- Camera programming parameters
- Camera user / passwords (shall not be default)

I. Approved video surveillance manufacturers: Milestone

- Security integrator to ensure that any camera selected shall be fully compatible with the visitor management system manufacturer and in weatherproof required environments shall be the weather resistant rated version of cameras listed below.
- Approved camera manufacturer – Hanwah
 1. Cameras shall be as per the legend for type as shown – integrator shall provide a minimum 5mp camera of all types in all locations, or current manufacturer product offering meeting or exceeding these specifications.
- Equivalent substitutions – none
- Approved visitor management system manufacturer – Milestone

4.2 ACCESS CONTROL SYSTEM

- A. Card reader control of designated doors shall be provided as shown on the security drawing. The devices associated with each card reader controlled door shall be indicated on the drawings detail sheets. Each card reader controlled door shall be provided with a request-to-exit sensor and an electric locking mechanism (provided by others) as well as door status monitoring as per drawing typical details sheets.
- B. All electric locking mechanisms shall be provided by the security integrator, and shall be:
- All locking hardware as per the door hardware schedule
 - Low voltage power supplied for the hardwired electric locking mechanisms shall be provided by the security integrator. Hardwired electric locks shall be powered from central power supplied located at the Access control panel locations. The contractor shall be responsible for connecting all locks to the power supplies, including any cabling through the door. The access control system shall monitor power failure.

- C. Coordinate and confirm all security hardware with the construction manager and architect.
- D. Request to exit sensor is motion activated with built in piezo sounder. The request to exit / sensor/ push-button shall release the electric locking mechanism. The request to exit sensor shall be wired fail-safe to the release the doors in the event of a failure of the exit control circuitry within the access control system/locking power supplies. All requests to exit sensors shall be labeled to meet local codes.
- E. Contractor shall coordinate all of the fire alarm door release relays needed for each controlled door with the fire alarm vendor. Contractor shall coordinate all ties from the control panel to the fire alarm system.
- F. Using the security center instance, the user will be able to monitor all access points, monitor and or emergency points, surveillance cameras and auxiliary outputs from, using client software on workstations.
- G. Exit doors from stairs are monitored access and alarm points. Upon opening door, an alarm will be indicated on the monitor of the access control software and provide for an alarm and video drop down alarm to the operator console(s).
- H. Programing for all cards to be included and unit cost pricing for all cards in batches of 1-10; 10-100; 100-500 etc. Shall be supplied for evaluation and provided for in the cost proposal for client review and procurement.
- I. Approved access control manufacturer – shall be Keyscan
 - Substitutions: none permitted on head end hardware or readers – general field devices and cabling, via industry standard offerings.
 - Readers to be model hid signo 20 mullion with bluetooth and near field communication capabilities.
 - Credentials to be issued and supplied by the integrator and be building compatible - iclass 37 bit credential with facility code – Kastle compliance
 - Door contacts to be by Sentrol, Gri or other industry standard device.
 - Request to exit devices to be by Kantech, Dortronics or other industry standard device with built in piezo sounder.
 - Cabling to be by Belden, West Penn or approved equal.
 - Integration of panic buttons, hub2a's – shall be populated on the mercury based controllers and provisioned as emergency monitoring points on the security center instance.

- 4.3 Substitutions: Any substitutions must be equivalent or better where requested. Refer to Section 012500 for Substitution Procedures

END OF SECTION 280000