SECTION 281300 - CARD ACCESS CONTROL SYSTEM

See information at end of section.

PART 1 - GENERAL

* + - 1. SYSTEM DESCRIPTION
         1. The card access control system controls, monitors and records all valid and invalid entries by personnel using photo ID Weigand Technology access cards at card reader terminals located adjacent to doors requiring secured access. The system also detects security violations at doors within secured areas.
         2. The system, when expanded to its full capacity has a minimum of 4200 access cards, 64 card readers, 64 access levels, 8 time zones, 512 alarm points and 192 control points.

Indicate where central controller is located in paragraph below.

* + - * 1. An attendant at the micro-processor based central controller located in the security office operates the system and observes the status of the doors within the secured areas.
        2. When a person wishes to enter a secure area, the person must pass the edge of an access card thru a slot in the card reader terminal at the entry door.
        3. The central controller automatically controls door access by comparing security information stored within the access card with information programmed within the central controller (facility code, list of acceptable access card I.D. numbers with their authorized places and times of entry, card access level, etc.).

If all conditions are met, a signal is sent by the central controller to the card reader terminal location to operate the release device, allowing the person to open door and enter secure area.

The printer prints out the access card I.D., access point, and time of day. Duplicate information is also displayed on the display screen. The attendant may program the central controller not to print each valid access in real time, but may print access activity as a summary report.

A green lamp illuminates at the card reader terminal indicating that access is granted.

A programmable access time period (1 to 14 seconds) determines the length of time the releasing device will remain open for authorized access.

If all conditions are not met, the central controller does not activate the release device but sounds an alarm and prints out the access card I.D., access point, time of day and indication of why access was denied.

Invalid versus valid access attempts are printed and displayed in contrasting color or manner.

A red lamp illuminates at the card reader terminal indicating that access is denied.

The attendant, using appropriate keyboard commands may program the central controller to transmit commands to automatically override card reader terminal control so that corresponding release device may be freed to enable door access for long time intervals when card access is not required (terminal override by time control).

The attendant may track a specific person through appropriate keyboard commands (entering the person’s name), displaying the last door used by that person.

* + - * 1. Each door is monitored for status (open/close).

When a door is opened without authorization an alarm sounds at the central controller. A printout occurs indicating which door is opened, and time of day. Duplicate information is displayed.

A programmable alarm shunt timer (2 to 120 seconds) allows door to be opened for authorized card access entry, allowing adequate time to enter without alarming system. An alarm occurs if door remains open beyond the preset alarm period.

The system does not alarm when an exit device (pushbutton, panic device) is used to leave a secure area. A programmable alarm shunt timer (2 to 120 seconds) allows door to be opened, allowing adequate time to exit. An alarm occurs if door remains open beyond the preset alarm period.

The attendant, using appropriate keyboard commands may program the central controller to automatically suppress alarms to enable door access for long time intervals when monitoring is not required.

* + - * 1. Alarm conditions are reported audibly, displayed visually, and printed with the time, date, location, alarm code and alarm detector identity. Alarms are silenced through appropriate keyboard commands.
        2. Access to the system functions are controlled thru at least 2 levels of access security to prevent program modifications or use by unauthorized personnel. Selective passwords may be used to allow display or control only, and for authorization to change programming parameters.
        3. The attendant, using appropriate keyboard commands, may validate or invalidate access card I.D. numbers or status levels and also add, delete or change the status level or time zone assignments for card readers.
        4. Upon appropriate keyboard or function command, the central controller displays and prints summary reports, including:

Alarms.

Access activity at specified card reader.

Denied access attempts.

Doors in override mode (card access).

Doors with alarms suppressed (monitored).

All transactions stored in disks (printout can also be selective by date, time, transaction type, card I.D. number, card reader or alarm monitor transactions).

All user programmable data.

* + - * 1. User programmable alarm monitoring and event functions (up to 200) may be programmed by the attendant through appropriate keyboard commands to automatically activate control points upon an alarm condition from monitored points.
        2. The central controller maintains a calendar clock for controlling and indicating all time-related functions.

The attendant may alter the parameters for time zone control through appropriate keyboard commands to define times when access to secure areas should be granted to card holder groups. A time zone consists of one or more intervals with each interval comprised of a start day and time and a stop day and time. It is possible to assign more than one interval to a single day within one time zone.

The attendant may add, omit or alter the parameters for user programmable automatic time-initiated functions (start/stop, on/off, etc.) through appropriate keyboard commands. The control points may also be manually operated through appropriate keyboard commands.

* + - * 1. All transactions are automatically logged, up to 38,000 events can be permanently recorded on disk storage.
        2. Failure of the 120 V ac primary (main) power supply:

Automatically transfers the card reader terminals and release devices to the secondary (standby) power supplies which then operate under maximum normal load condition for 4 hours.

Increase time if required. Verify that secure space is available for the secondary (standby) power supplies at each card reader terminal and release device location.

Automatically transfers the central controller to it’s secondary (standby) power supply which maintains vital memory parameters for 4 hours. The central controller, printer and display are non-functional. Failure of the ac operating power is indicated at the central controller.

The central controller requires a 120 V ups (section 260532) if it is required to be fully operational during primary (main) 120 V ac power supply.

* + - * 1. Upon restoration of the primary (main) 120 V ac power supply, the system reverts back to normal operation without attendant intervention or manual re-start procedures.
        2. The central controller continuously monitors the communications and data processing cycles of the micro-processor. Upon central controller failure, an audible and visual alarm alerts attendant.
        3. Supervision of signaling line circuits (wiring between card reader terminals, alarm monitor terminals and central controller) indicates trouble conditions at the central controller. A loss of continuity does not impair system operation (loop type circuit for bi-directional communications). A print-out and display occurs to identify faults.
        4. Supervision of initiating device circuits (wiring between card reader terminals, alarm monitor terminals and alarm detector) indicates alarm conditions at the central controller when attempts are made to compromise the system by bridging or wiring over alarm detectors or cutting initiating device circuit wiring.
        5. A communication failure indication (print-out, display and alarm) occurs at the central controller when a card reader terminal or alarm monitor terminal does not respond with a message each time it is polled by the central controller.

A disabled card reader terminal or alarm monitor terminal causes a printout showing the time, address and message indicating that device is disabled. A report is also made when the device is restored to normal.

* + - * 1. Failure of the central controller results in the card reader terminals switching to an off line mode.

Card reader terminals will allow access by reading facility code only.

Card reader terminals may be programmed to deny access during failure of the central controller.

* + - 1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.
         5. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.
         6. Shop Drawings:

Bill of materials.

Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be accepted).

Total electrical load of the complete system in supervisory and alarm conditions.

Detailed description of system operation (format similar to SYSTEM DESCRIPTION).

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Name, address and telephone number of nearest fully equipped service organization.

* + - * 1. Quality Control Submittals:

Copy of license for installing Security Systems.

Also include copy of identification card issued by the Licensee for each person who will be performing the work.

Company Field Advisor Data: Include:

Name, business address and telephone number of Company Field Advisor secured for the required services.

Certified statement from the Company listing the qualifications of the Company Field Advisor.

Services and each product for which authorization is given by the Company, listed specifically for this project.

* + - * 1. Contract Closeout Submittals:

Test Report: System acceptance test report.

Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.

Operation and Maintenance Data:

Deliver 2 copies, covering the installed products, to the Director’s Representative. Include:

Operation and maintenance data for each product.

Complete point to point wiring diagrams of entire system as installed. Number all conductors and show all terminations and splices. (Numbers shall correspond to numbered tags installed on each conductor.)

Name, address, and telephone number of nearest fully equipped service organization.

* + - 1. QUALITY ASSURANCE
         1. Company Testing Facility: The Company producing the system shall have test facilities available which can demonstrate that the proposed system meets contract requirements.
         2. Equipment Qualifications For Products Other Than Those Specified:

At the time of submission provide written notice to the Director of the intent to propose an “or equal” for products other than those specified. Make the “or equal” submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.

If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.

Only references from the actual owner or owner’s representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.

Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

* + - * 1. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 16 working hours for the following:

Render advice regarding installation and final adjustment of the system.

Assist in initial programming of the system.

Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.

Train facility personnel on the operation and maintenance of the system (minimum of 2 one hour sessions).

Explain available service programs to facility supervisory personnel for their consideration.

* + - * 1. Service Availability: A fully equipped service organization capable of guaranteeing response time within 24 hours to service calls shall be available to service the completed Work.
      1. MAINTENANCE
         1. Spare Parts:

Change quantities to suit.

50 percent spare of each type fuse.

Film for 400 pictures.

1000 access cards.

Laminating material for 1000 cards.

1000 eyelets.

1000 snap on removable clips.

4 spare magnetic switches.

10 diskettes.

One case printer paper.

10 printer ribbons.

1. PRODUCTS
   * + 1. CARD ACCESS CONTROL SYSTEM
          1. Cardkey Systems’ D-2000 Access Control system, having:

Input circuits suitable for operation on 120 V ac primary (main) power supply and 12 or 24 V dc secondary (standby) power supply.

Battery powered secondary (standby) power supply to operate portions of central control as specified under SYSTEM DESCRIPTION.

Capacity which includes:

All present functions.

All listed future functions.

Ten percent spare reader and alarm point capacity.

Dual disk for program storage, system data file, cardholder data, etc. (second drive operates as backup in the event the primary disk fails and for archiving transaction data).

A display which includes a cathode ray tube (CRT) with 9 inch (diagonal) screen, 80 characters per line by 24 line display.

Alpha-numeric, English language, dot matrix type, 80 column format printer capable of minimum 180 characters per second.

In addition to transactions and alarms, the printer, once each hour, on the hour, prints the day of year, day of week and time.

Power Line Regulator: Cardkey Systems’ SB9-A.

Desk or surface mounted cabinet containing central controller components.

Desk (for CRT, keyboard, printer, storage, etc.):

Steel, minimum 16 gage, painted with rust resisting primer and 2 coats of paint.

Height, depth and width to accommodate equipment mounted thereon.

Components arranged so that all equipment is legible from one control point and can be manned by one attendant.

Desk equipped with writing surface at normal desk height and a storage area consisting of 2 file type drawers or shelves with door.

Chair: Adjustable tilt swivel, open arms, 5 leg pedestal with casters, upholstered foam cushion back and seat. Style to match desk.

Terminals:

Card Readers: Cardkey Systems’ L9-A-2B, with supervising module S-31.

Alarm Monitors: Cardkey Systems’ M-39, with supervising module S-31.

Secondary (Standby) Power Supplies: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries; Eagle-Picher’s Carefree Magnum, Gates’ Sealed Rechargeable Batteries 0800, 0810, 0820 (plastic case), Globe’s Gel/Cell GC, or Gould’s Gelyte PB, with:

Ampere-hour capacity to operate the card reader terminals under conditions specified in SYSTEM DESCRIPTION.

Two rate automatic battery chargers with charging characteristics as recommended by battery manufacturer.

Batteries and chargers integrally mounted in separate locked and monitored cabinets.

Access Cards: Cardkey Systems’ K21-H (Photo Mask), and J15A laminating material.

* + - 1. PHOTO IDENTIFICATION EQUIPMENT
         1. Photo I.D. System: Polaroid Corp.’s Model 710 Instant ID-3 System, with Type 668 Land pack film.
         2. Automatic Punch and Eyelet Setter: Harco Industries Inc.’s (Phoenix, Arizona) AFP-64, with eyelets LA33-74 and snap on removable clips LA33-61.
      2. DOOR HARDWARE
         1. Release Device: Locknetics No. 268-12/10 (voltage to suit system).

Power Control Unit for Release Device: Locknetics No. 583ACR3 PXATD-K (voltage to suit system).

* + - * 1. Secondary (Standby) Power Supplies: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries; Eagle-Picher’s Carefree Magnum, Gates’ Sealed Rechargeable Batteries 0800, 0810, 0820 (plastic case), Globe’s Gel/Cell GC, or Gould’s Gelyte PB, with:

Ampere-hour capacity to operate the release devices under conditions specified in SYSTEM DESCRIPTION.

Two rate automatic battery chargers with charging characteristics as recommended by battery manufacturer.

Batteries and chargers integrally mounted in separate locked and monitored cabinets.

* + - 1. ALARM DETECTORS
         1. Magnetic Switches: Alarm Device Mfg. Co.’s Ademco 39-2.
      2. WIRING
         1. Insulated conductors shall meet requirements of Section 260519 and the following:

Signal Line Circuits (Wiring from Central Controller to Card Reader Terminals and Alarm Monitor Terminals): Jacketed, 22 gage insulated copper, individually twisted shielded pairs; Belden Corp.’s 8723.

Initiating Device Circuits (Wiring from Card Reader Terminals and Alarm Monitor Terminals to Alarm Detectors): Jacketed, 22 gage insulated copper twisted shielded pair; Belden Corp.’s 8451.

Wiring from Card Reader Terminals to Release Devices: Jacketed, 18 gage insulated copper twisted pair; Belden Corp.’s 8461.

Terminal, Faceplate and Release Device Grounding: 16 gage insulated copper conductor; Belden Corp.’s 9980.

Wiring shall be shielded or unshielded as recommended by the Company producing the system.

Number of conductors and conductor size as recommended by the Company producing the system, except that conductor size shall not be less than previously specified.

* + - 1. TERMINAL LOCATOR
         1. Card holder with aluminum or stainless steel frame, plexiglass front and sheet aluminum card backing plate. Print graphically on card, floor plan showing each card reader terminal, alarm monitor terminal and alarm detector. More than one card and card holder may be used. Minimum size card 8 x 10 inches.
      2. LABELS
         1. Embossed, self adhesive tape, minimum l/4 inch wide, color of tape similar to color of equipment to be labeled (DYMO Labelmaker System).
      3. ACCESSORIES
         1. System shall include all accessories required to perform the functions summarized in SYSTEM DESCRIPTION and indicated on the drawings.

1. EXECUTION
   * + 1. INSTALLATION
          1. Install system in accordance with the Company’s printed instructions.
          2. Terminal Locator: Install adjacent to central controller.
          3. Labels: Install on each card reader terminal, alarm monitor terminal and alarm detector, an identifying label (Card Reader No. 1, etc.).
       2. FIELD QUALITY CONTROL
          1. Preliminary System Test:

Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly.

Run a preliminary test for the purpose of:

Determining whether the system is in a suitable condition to conduct an acceptance test.

Checking and adjusting equipment.

Training facility personnel.

* + - * 1. System Acceptance Test:

Preparation: Notify the Director’s Representative at least three working days prior to the test so arrangements can be made to have a Facility Representative witness the test.

Make the following tests:

Individually test each door (card access and monitoring).

Test audible alarm.

Test each system function step by step as summarized under SYSTEM DESCRIPTION.

Supply all equipment necessary for system adjustment and testing.

Submit written report of test results signed by Company Field Advisor and the Director’s Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the central controller.

END OF SECTION 281300

The remainder of this section is for information only. Not to be included in project specifications.

1. Codes, standards and references applicable to the installation of card access control systems:

a. National Electrical Code Art. 725 (these systems normally operate within the limits of class 2 remote-control and signal circuits).

b. UL - 294 - Access Control System Units.

Note: c. Thru l. Below can be applicable if the system is designed to meet the requirements of a UL listed burglar alarm system.

c. UL 365 - Police Station Connected Burglar Alarm Units and Systems.

d. UL 603 - Power Supplies for use with Burglar-Alarm Systems.

e. UL 606 - Linings and Screens for use with Burglar-Alarm Systems.

f. UL 609 - Local Burglar Alarm Units and Systems.

g. UL 611 - Central Station Burglar Alarm Systems.

h. UL 634 - Connectors and Switches for use with Burglar-Alarm Systems.

i. UL 636 - Holdup Alarm Units and Systems.

j. UL 639 - Intrusion-Detection Units.

k. UL 681 - Installation and Classification of Mercantile and Bank Burglar-Alarm Systems.

l. UL 1076 - Proprietary Burglar Alarm Units and Systems.

2. Show one line diagram of complete system, but do not show number or size of wires (see information at end of section 260532 indicating alternate methods for showing the risers on the drawings).

3. Show card reader terminals and alarm monitor terminals on the drawings (include active and spare points). Show location of alarm detectors.

END OF INFORMATION 281300