SECTION 28 1000 - ACCESS CONTROL SYSTEMS - BLACKBOARD

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. Door contacts

B. Access control panels.

C. Proximity readers, cards.

D. Server/Controller

1.02 RELATED SECTIONS:

A. Section 08 7100 – Door Hardware

B. Section 08 7113 – Automatic Door Operators

C. Section 26 0500 – Common Work Results for Electrical

D. Section 27 0500 – Common Work Results for Communications

E. Section 27 0502 – Required Submittals for Communications

F. Section 27 0528 – Pathways for communications systems

G. Section 270553 – Communications Identification and Labeling

H. Section 271500 – Intrabuilding Communications Horizontal Cabling

1.03 REFERENCES:

A. FCC Part 15 – Radio Frequency Devices

B. ISO 7813 – Identification Cards - Financial Transaction Cards

C. NFPA 70 – National Electrical Code (NEC)

D. UL 294 – Access Control System Units.

E. UL 1635 – Digital Alarm Communicator System Units

1.04 WARRANTY

A. Provide a two year parts and labor warranty.

1.05 SYSTEM DESCRIPTION:

1. Access Controls
2. The system is an extension of the campus blackboard system. Owner will provide network readers, master door controllers, card readers (Unless noted otherwise on project documents). Contractor shall provide installation raceways, wiring connections, and terminations.
3. During normal hours, the access control system shall unlock controlled doors. Card reader activation of door shall unlock door and shunt door monitor switch.
4. Refer to Section 08 7100 for time control circuits and sequence of operation.

3. The access control system shall control outside activation to automatic door operators inside activation shall remain at all times. During locked times, outside activation to the door operator shall be controlled off. During unlocked times, outside activation to the door operator shall be controlled on and enable door operation by pushbutton switch.

a. Credentials with special “handicap” authorization shall unlock and open door.

4. Each access event through each entrance point shall be logged for a period of minimum 30 days.

B. The system shall be connected to the LAN and allow activity reporting, programming, and operation via a computer connected through the LAN.

1. The central administrative server shall allow access programming, global operation of system and activity reporting of the entire security/access system.

2. Each access control panel shall be networked via the district LAN/WAN to the central administrative server.

1.06 SUBMITTALS:

A. Submit under provisions of Section 01 3300 and/or 270502.

B. Shop Drawings: Submit detail floor plan drawings indicating equipment locations, wiring and zoning.

C. Product Data: Submit manufacturer’s data in booklet form with a separate sheet for each item. Specifically identify all items with exact model numbers.

D. Wiring Diagram: Indicate wire size, type, and number of wires. Indicate maximum length to devices from control units.

E. Provide record drawings and operation and maintenance manuals in accordance with Section 01 7700 and/or 270502.

1. Include system programming documentation and programming access codes.

1.07 QUALITY ASSURANCE:

A. Installer Qualifications: Firms regularly engaged in the installation of security alarm systems, with minimum 5 years experience.

1. Each supplier shall hold current, valid franchises for the equipment furnished by them.

B. Regulatory Requirements and Reference Standards:

1. Comply with applicable requirements of FCC Part 15.

2. Comply with applicable requirements of NEC.

3. Comply with applicable requirements of UL 294, 609, 1610, and 1635.

4. Provide products which are UL listed and labeled.

1.08 MAINTENANCE SERVICE:

A. Provide service and maintenance of complete system for one year from Date of Substantial Completion.

B. Provide minimum two inspections per year. Manufacturer’s representative shall check out the equipment and submit a letter of completion.

PART 2 - PRODUCTS

2.01 DOOR CONTACTS:

A. Door Contacts: In accordance with Section 08 7100.

B. Contractor shall install door contacts provided by general contractor.

2.02 ACCESS CONTROL SYSTEM:

A. Manufacturers:

1. Blackboard

B. Access Control Server/Controller: Furnished by Owner installed by contractor.

C. Access Control Master Door Controller: Furnished by Owner installed by contractor.

1. Card access reader equipment must be located in tele/data room as close as possible to the door.

2. Consult with facilities and construction lock shop for specifications and installation information.

 2.03 CARD READERS:

A. Manufacturers:

1. Blackboard.

 B. Card Reader: Blackboard SA3000- confirm with project requirements if owner or contractor furnished.

1. At least one exterior door for all new buildings, additions and major renovations shall be fitted with card access reader. SA3000 readers are purchased through the auxiliary services department.

2. Consult with Facilities and Construction lock shop for specifications and installation information.

 C. Offline Readers: Schlage CO200/AD200 magstripe. (Limited interior doors only)

2.04 WIRING:

1. Card slot controller – West Penn D25510, or equivalent
2. Power Supply to Electric latch Retraction: 2 conductors stranded 14 gauge up to 100 ft. West Penn 25226B or equivalent or 12 gauge up to 200 ft. West Penn 25227B or equivalent. No single conductor building wire.
3. Electric Strike: 2 conductors stranded 14 gauge up to 100 ft. West Penn 25226B or equivalent.
4. Door Position Switch: 2 conductors stranded Belden 9320 West Penn 25224B or equivalent
5. Request to Exit latch Monitor: 2 conductors stranded West Penn 25224B or equivalent. On doors that require motion sensors for request to exit, utilize West Penn 25244B.

2.05 ACCESSORIES:

A. Cable Identification: Preprinted heat shrink tubing type wire markers.

1. Manufacturers:

a. Thomas & Betts Corp.

b. Nelco Products, Inc.

c. Panduit Corp.

d. Substitutions: Refer to Section 01 6000 and/or Section 27 0500.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Furnish all material, labor, equipment and services necessary for a full turnkey installation of the system.

B. Furnish and install the system equipment, in accordance with the manufacturer’s and U.T. Construction Lock Shop instructions, and provide all interconnection cables and materials necessary.

C. Furnish, install, power, and interconnect the quantity of access control panels required to control all of the doors indicated on the Drawings.

D. Access control system shall be wired to manufacturer’s requirements. Drawings indicate the specified manufacturer’s wiring.

1. All network card access doors shall be equipped electric latch retraction with request to exit switch and latch monitoring built into the door hardware with position switches on the door. Doors with cylindrical or mortise locks can sue an electric strike with motion sensor for request to exit.
2. For new construction and major renovations wiring in door frames shall be in conduit from power transfer and door position switch to accessible junction box to the location of card access equipment. Card slot shall be mounted to a metal single gang box with conduit to junction box or stubbed above accessible ceiling. Conduit diameter shall be a minimum ¾” from junction box to card access equipment.
3. Low voltage wiring shall be run open above accessible lay-in ceilings, installed in accordance with Section 27 0528. The wiring shall be run in conduit in areas with inaccessible or exposed ceilings. All security system devices shall include a back box with ¾ inch conduit stubbed to accessible ceiling area. Conduits shall be minimum ¾ inch, sized per NEC requirements.

1. Observe minimum bend radius and tension limitations, etc., as specified by the cable manufacturer when installing the cables.

2. Cables that require service loops or additional length shall be coiled at 200% of their recommended minimum bend radius. The coil shall then be cable tied and attached to a nearby support.

3. Cable ties within equipment cabinets shall be hook and loop fastener type.

4. Identify cables at both ends with cable designation of equipment or outlet connection.

5. Cable identification shall be permanently applied wire markers, located within 6 inches of the termination. Use only manufacturer’s approved type heat gun to shrink the wire markers.

6. Provide adequate length of conductors. Bundle, lace and train the conductors to terminal points with no excess. Provide and use lacing bars.

7. Furnish and install a dedicated, isolated earth ground from the central equipment rack and bond to the incoming electrical service ground bus bar.

H. System shall be configured, programmed and fully operational at Substantial Completion. Verify with the Owner exact programming prior to finalizing programming.

I. The initial access levels and card programming for each user shall be performed by the Owner.

J. Contractor shall coordinate with all trades and owner for installation and programming and functionality of all components.

3.02 FIELD QUALITY CONTROL:

A. Manufacturer’s Field Services: Provide services of a duly factory authorized service representative for this project location to supervise the field assembly and connection of components and the pre-testing, testing and adjustment of the system.

B. Inspection: Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified.

C. Testing: Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies. Verify by the system test that the total system meets the specified requirements and complies with applicable standards.

3.03 ADJUSTING:

A. Provide up to two visits to the site within one year of date of Substantial Completion, upon request from the Owner, for on site assistance in adjusting hardware, resetting sensor sensitivity, and adjusting controls to suit actual occupied conditions.

3.04 CLEANING:

A. Provide final cleaning in accordance with Section 01 7700.

END OF SECTION 28 1000