

SECTION 28 13 00
ACCESS CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Conduit and boxes
- B. Power wiring

1.2 SYSTEM DESCRIPTION

- A. Card access system shall include the furnishing and installation as noted here:
 - 1. Conduit system and power feeds.
 - 2. Installation and Connecting of Door Hardware Power Supplies.
 - 3. Wiring and Connecting of Electric Door Hardware.
 - 4. Wiring and connecting of elevators.

1.3 SUBMITTALS

- A. Submit under the provisions of Section 01 33 00.
- B. Shop Drawings: Indicate layout, raceway diagrams, and equipment dimensions.
- C. Product Data: Provide data sheets for each item of equipment, depicting equipment capacity.

1.4 RECORD DRAWINGS

- A. Submit under the provisions of Section 01 77 00.
- B. Accurately indicate actual locations of cabinets, boxes, and conduit runs.

PART 2 PRODUCTS

2.1 MAIN terminal board

- A. Surface mounted on ½" thick plywood backboard painted tan.

2.2 CONDUIT AND BOXES

- A. Provide and install for each building according to the following criteria:
 - 1. There must be one Access Control Panel within 200' of edge device.
 - 2. Each eight (8) controlled devices and the cabinet must be located on the same floor as the controlled devices.
 - 3. Raceway shall not exceed 400' without a pull box.
 - 4. Do not provide 1/2" conduits, minimum conduit size shall be ¾".
- B. Provide and install ¾" conduits from Access Control Panel and distribute to feed the junction and mounting boxes designated for the area.
 - 1. Each separate ¾" feed will supply no more than two Controlled Device/Card Reader Feed locations.
- C. Provide and install an elevator interface cabinet, 12" x 12" x 4" with hinged lockable cover and a ½" plywood backboard painted tan with a 10 - lug terminal strip mounted on the board at all designated elevator control panel locations.
 - 1. Feed this interface box from the ¾" card access raceway.
 - 2. Provide and install a separate ¾" raceway from the box into elevator control panel.
 - 3. Label this box "Card Access/Elevator Interface".
 - 4. The Elevator Contractor shall extend his control wiring from the elevator control panel to this interface box.
- D. Provide 4-11/16" x 4-11/16" x 2½" flush mounted box with single gang mud ring and weatherproof cover at each elevator stop.
 - 1. Mount the box adjacent to the elevator call-button box and use a ¾" conduit to connect the two boxes.

2. Run a $\frac{3}{4}$ " conduit from the 4-11/16" x 4-11/16" x 2 $\frac{1}{8}$ " box back to the nearest Card Access terminal cabinet and terminate.
- E. At each externally controlled door, install the electric hardware's power supply above drop ceiling within 50' of the hardware.
 1. In "separate" raceway, supply 120V feed to the power supply.
 2. Provide and install a $\frac{3}{4}$ " conduit from the supply box to a neutral 6" x 6" x 4" distribution box located next to the supply. Feed this box from the $\frac{3}{4}$ " card-access system raceway.
 3. Provide and install from box in 2.2-E-2 an additional $\frac{3}{4}$ " raceway along with (8) 18AWG and (2) 12AWG conductors run from the supply box to feed the electrical power transfer device
 4. Supply box noted in 2.2-E, connect the electric hardware through the electrical power transfer device.
- F. At each internally controlled door, install the electric hardware's power supply above drop ceiling within 200' of the hardware.
 1. In "separate" raceway, supply 120V feed to the power supply.
 2. Provide and install a $\frac{3}{4}$ " conduit from the supply box to a neutral 6" x 6" x 4" distribution box located next to the supply.
 3. Feed this box from the $\frac{3}{4}$ " card-access system raceway.
 4. From this box provide and install an additional $\frac{3}{4}$ " raceway along with (8) 18AWG and (2) 12AWG conductors run from the supply box to feed the electrical power transfer device.
 5. From the supply, using that wiring, connect the electric hardware through the electrical power transfer device.
- G. Provide and extend raceway to feed 4-11/16" x 4-11/16" x 2 $\frac{1}{8}$ " flush mounted boxes with single gang mud ring and weatherproof covers; mounted with the opening vertical, at all designated card reader locations.
 1. Locate to the strike side of single doors, and as designated for double doors, elevator control, and gates.
 2. Center 4' above finished floor.
- H. Provide and install a 2" conduit from the closest IDF/MDF room to a brooks box located at designated entry gates.
 1. Exact location determined during plan review.
- I. Provide and install a 4-11/16" x 4-11/16" x 2 $\frac{1}{8}$ " card access feed junction box with cover, at the interior side of all designated card access door locations.
 1. If the area location has removable ceiling tile, the box shall be located above the tile.
 2. If the location has a structure of fixed ceiling material then flush-mount the box with a square to round mud ring & cover.
- J. Provide and install a 4-11/16" x 4-11/16" x 2 $\frac{1}{8}$ " flush mounted box with single gang mud ring and weatherproof cover; mounted with the opening vertical at 48" AFF as the designated "TeleEntry" mounting box.
- K. Provide and install a 4-11/16" x 4-11/16" x 2 $\frac{1}{8}$ " flush mounted box with single gang mud ring and weatherproof cover; mounted with the opening vertical at 60" AFF as the designated "Master Key Control Box" mounting box, and provide a 24" x 24" free space for mounting the Key Box.
- L. Provide and install a $\frac{3}{4}$ " conduit from the IDF/MDF room Access Control Panel.
- M. Provide and install six additional recessed mounted 4-11/16" x 4-11/16" x 2-1/8" boxes with flush single gang ring and cover; mount the opening vertical with $\frac{3}{4}$ "-conduit run to nearest card access junction box, (estimate 100' of conduit for each run).
 1. Wall mounted locations directed in the field during construction prior to final above ceiling inspection.

POWER FEEDS

- N. Provide a double duplex, dedicated 120-volt power receptacle fed from the optional branch of emergency generator power source, adjacent to the lower portion of the main terminal cabinet and each distribution cabinet.
- O. Provide and install dedicated 120-volt power feeds from the optional branch of emergency generator source to all Electric Hardware Power supplies.

2.5 CARD ACCESS SYSTEM FOR THE ELEVATOR

- A. The Electrical Contractor shall provide and install a 1" conduit with string from the Card Access/Elevator Interface cabinet to the Elevator Machine Room Cabinet.
 - a. The Electrical Contractor shall provide and install a 4-11/16" x 4-11/16" x 2½" flush mounted box with single gang mud ring and weatherproof cover at each elevator stop.
 - b. Mount the box adjacent to, within 8" of the elevator call button box, and use a ¾" conduit to connect the two boxes.
 - c. Run a ¾" conduit from the 4-11/16" x 4-11/16" x 2½" box on the first floor to the second and third floor.
 - d. From the first-floor box provide and install a 1" conduit with string to the Card Access/Elevator Interface cabinet.
 - e. Provide and install a double duplex, dedicated 120-volt power receptacle fed from the optional branch of emergency generator power source, adjacent to the lower portion of the Card Access/Elevator Interface cabinet.
- B. The Elevator Contractor shall provide and install a HID ProxPro Reader-Wiegand/Clock and Data 5355/8A in each elevator cab.
 - a. The Elevator Contractor shall provide and install all necessary wiring to ensure that the card access system can control each elevator floor stop location.
 - b. Elevator cabling and card reader cabling shall meet the manufacturer's requirements and the code.
 - c. If drawings do not provide installation detail, obtain installation detail from the School Police Department.
 - d. The Elevator Contractor shall provide and install a terminal strip inside the Card Access/Elevator Interface Cabinet and land the card reader wiring and elevator control wiring here and label each.
 - e. The Elevator Contractor shall install a temporary shorting bar to act as a closed switch for each elevator floor stop in the Card Access/Elevator Interface Cabinet.
 - f. The Elevator Contractor shall at each elevator call station located at each elevator stop; provide and install a two conductor wires from the elevator call station box.
 - g. These wires shall pass through the ¾" conduit between the elevator call station box and into the 4-11/16" x 4-11/16" x 2-1/8" card access junction box adjacent to the elevator call box (refer to installation detail).
 - h. In the elevator call station box disconnect the wire from one leg of the call button then connect one of the wires to the open leg of the call button.
 - i. Then connect the other wire to the wire removed from the call button leg.
 - j. In the card access junction box, connect the two wires coming from the elevator station call box together using a wire nut.
 - k. At the completion of the work the elevator shall perform the following functions:
- C. Inside the Cab
 - a. The card reader in the cab shall control each floor stop button.

- b. The cab shall have an override key operated switch that will override the in cab card reader and allow access to each floor stop button.
 - c. The cab shall have an override key operated switch that will override the cab card reader, allow access to each floor stop button, and provide elevator cab capture for emergency responses forces.
 - d. The elevator function shall meet the elevator code.
- D. Elevator call box station
- a. The card reader at each elevator call box station location shall control the call button.
 - b. The elevator call box station on each floor shall include an override key operated switch that will override the card access system and allow the call button to activate the elevator.
 - c. The elevator call box station on each floor shall include an override key operated switch that will override the card access system and allow the call button to activate for emergency responses forces.
 - d. The elevator function shall meet the elevator code.

2.6 Cabling

- A. Use of the composite cable is approved, however it must follow the same codes and manufactures spec as though they were running independently.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install system in accordance with NECA "Standard of Installation" and Section 26 05 33.
- B. Obtain a detail book from the SDPBC School Police Department Security Section for system specifics.
- C. Permanently label all conduits as to plan room number destination, at all Control panels and power supplies.
- D. Paint all Card access system junction box covers tan.
- E. Install ½" (tan round indicators) of paper construction on ceiling tile grid work at all locations where card access system boxes are located above the drop ceiling.
- F. Install 200 lb strength pull string throughout the raceway system.
- G. The Card Access System raceway shall be a separate raceway and shall not interconnect with or be used by any other system without the authorization of the SDPBC School Police Department Security Section or per DMS sections 28 16 00, 28 33 00, 27 53 10.
- H. Mount all junction boxes located above ceiling with the opening facing down, and with a reasonable immediate access pathway provided.
 - 1. Note: The requiring of removing of a light fixture or other similar ceiling equipment is not a reasonable access pathway).
- I. All conduit runs shall be as direct as possible in order to save on wiring costs and to reduce poor performance due to cable loss.
- J. Refer to SDPBC DMS Section 08 71 00 for Card Access Door preparation.

3.2 LOCATIONS

- A. Provide a card reader/controlled device at the following locations:
 - 1. Administrative main entry
 - 2. Main entry door to facility
 - 3. Principal's office
 - 4. Police Officers office
 - 5. Nurses station
 - 6. Bookkeeper's /treasurer's office

The School District of Palm Beach County

Project Name:

SDPBC Project No.:

7. Drop safe location
8. Media center
9. A/V storage room
10. CCTV studio area
11. Cafeteria main entry
12. Cafeteria receiving
13. Cafeteria dry food storage area
14. Cafeteria manager's office
15. Elevator entry on all floors
16. Gymnasium
17. Auditorium
18. Custodial receiving
19. Video Surveillance Control Room Door
20. MDF Room
21. Playgrounds/athletic fields
22. Other areas as defined in the SDPBC plan specific review process.

3.3 DEMONSTRATION AND TRAINING

- A. Training of the Owner's operation and maintenance personnel is required in cooperation with the Owner's Representative.
 1. Provide competent, factory authorized personnel to provide instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems.
 2. Schedule the instruction in coordination with the Owner's Representative after submission and approval of formal training plans.
 3. Refer to Section 01 91 00, Commissioning, for further contractor training requirements.
- B. Provide demonstration and training for all types of card access systems installed in this project.

END OF SECTION