SECTION 281000 - ACCESS CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Access control system.

B. Related Requirements:

1. Section 260010 "Supplemental Requirements for Electrical" specifies additional requirements applicable to coordinating, scheduling, and sequencing of the Work specified in this Section.

2. Section 087100 "Door Hardware" specifies the following:

a. Electric strike(s).
b. Electromagnetic lock(s).
c. Delayed-egress electromagnetic lock(s).
d. Electromechanical lock(s).
e. Self-contained electronic lock(s).
f. Exit lock(s) and alarm(s).
g. Auxiliary electrified door hardware.

3. Section 087113 "Power Door Operators" specifies the following:

a. Door operator controls.
b. Panic exit device(s).
c. Electric strike(s).
d. Auxiliary electrified door hardware.

4. Section 281400 "Access Control System Hardware" specifies the following:

a. Access control system door controller(s).
b. Access control system input/output interface(s).
c. Access control system power supply and battery charger(s).

5. Section 281500 "Integrated Access Control Hardware Devices" specifies the following:

a. Proximity reader(s) for card, fob, or smartphone.

6. Section 281517 "Egress Management Devices" specifies the following:

a. Magnetic lock hardware with special locking arrangement.

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1.2 DEFINITIONS

A. DGP: Data gathering panel.

B. NFC: Near field communications.

C. REX: Request-to-exit.

1.3 ACTION SUBMITTALS

A. Shop Drawings:

1. Project general notes.
2. Head-end hardware, equipment, and device locations.
3. Block diagram and cable/conduit routing illustrating end-to-end system wiring.
4. End-to-end system communications details.
5. Secondary power calculations

B. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Manufacturers' Published Instructions: Record copy of official installation instructions issued to Installer by manufacturer for the following:

1. Installation instructions for access control system input/output interface.
2. Installation instructions for access control system door controllers.
3. Installation instructions for access control system power supplies and battery chargers.
4. Manufacturer's recommended testing and inspection procedure for operation of access control system servers, panels, input/output interfaces, door controllers, and workstations.
5. Manufacturer's recommended testing and inspection procedure for operation of access control system power supplies and battery chargers.
6. Installation instructions for integrated credential readers and entry management devices.
7. Installation instructions for electrified locking devices and accessories.
8. Installation instructions for egress management devices.
9. Manufacturer's recommended tests and inspections for integrated credential readers and entry management devices.
10. Manufacturer's recommended tests and inspections for electrified locking devices and accessories.
11. Manufacturer's recommended tests and inspections for egress management

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devices.

B. Warranty documentation.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION

3.1 INSTALLATION OF ACCESS CONTROL SYSTEM

A. Description: Access control system provides a means of regulating or controlling physical entry into an area, or access to or use of a device by electrical, electronic, and/or mechanical means. Typical access control system includes a card reader at a controlled door, which reads a user credential and sends the collected data to a centrally located DGP over the cabling infrastructure. DGP may hold a user database onboard or may communicate with a user database over the network. If user is authorized for access at a controlled door, DGP signals the electronic lock at the door to unlock. If user credential is not authorized according to user database, the door remains locked and access is denied. In addition to card readers and electronic locks, access control systems may include various other connected devices programmed for a desired function.

B. Performance Criteria:

1. Regulatory Requirements:

a. Components listed and labeled in accordance with NFPA 70 and NFPA 72, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
b. Comply with NFPA 1, NFPA 730, NFPA 731, and ICC IBC.

2. Listing Criteria: UL CCN ALOV and UL CCN ALVY; including UL 294.
3. Consult Architect for resolution of conflicting requirements.

C. Selection of Access Control System Components:

1. Source Limitations: Obtain components for access control system from sources approved by manufacturer warranting performance of entire system.
2. Provide the following specified products with the access control system:

a. Access Control System Hardware:

1) Quantity as indicated on Drawings of access control system door controller(s) <Insert drawing designation>.
2) Quantity as indicated on Drawings of access control system input/output interface(s) <Insert drawing designation>.
3) Quantity as indicated on Drawings of access control system power supply and battery charger(s) <Insert drawing designation>.

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b. Security Door Hardware:

1) Quantity as indicated on Drawings of electric strike(s) <**Insert drawing designation**>.
2) Quantity as indicated on Drawings of electromagnetic lock(s) <**Insert drawing designation**>.

3) Quantity as indicated on Drawings of exit lock(s) and alarm(s) <**Insert drawing designation**>.
4) Quantity as indicated on Drawings of auxiliary electrified door hardware <**Insert drawing designation**>.
5) Quantity as indicated on Drawings of door operator controls <**Insert drawing designation**>.
6) Quantity as indicated on Drawings of panic exit device(s) with electric strike <**Insert drawing designation**>.

c. Integrated Credential Readers and Entry Management:

1) Quantity as indicated on Drawings of proximity reader(s) for card, fob, or smartphone <**Insert drawing designation**>.

d. Electrified Locking Devices and Accessories:

1) Quantity as indicated on Drawings of REX motion sensor(s) <**Insert drawing designation**>.
2) Quantity as indicated on Drawings of REX push-button(s) <**Insert drawing designation**>.

e. Egress Management Devices:

1) Quantity as indicated on Drawings of magnetic lock hardware with special locking arrangement <**Insert drawing designation**>.
2) Quantity as indicated on Drawings of panic hardware with special locking arrangement <**Insert drawing designation**>.

D. Special Techniques:

1. Comply with manufacturer's published instructions.
2. Mounting Heights: Mount field devices in accessible locations in accordance with United States Access Board ADA-ABA Accessibility Guidelines standards.
3. Wiring Methods:

a. Backbone Cable Type: Single-mode fiber.
b. Cable Type: Unshielded.
c. Analog Maximum Cable Length: 1000 ft.
d. Digital Maximum Cable Length: 500 ft.

E. Interfaces with Other Work:

1. Coordinate installation of new access control system components with existing

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conditions.

2. Coordinate with Section 087100 "Door Hardware" for interfacing access control system devices with door hardware.

3. Coordinate with Section 284600 "Fire Detection and Alarm" for unlocking secured doors that are in exit ways, with or without delay.

3.2 FIELD QUALITY CONTROL OF ACCESS CONTROL SYSTEM COMPONENTS

A. Administrant for Security Tests and Inspections:

1. Administer and perform tests and inspections.

B. Tests and Inspections:

1. Perform manufacturer's recommended tests and inspections for access control system components.
2. Perform industry standard tests and inspections for power supplies, batteries, and other standby power provisions.
3. Engage factory-authorized service representative to test end-to-end system connection and functionality.
4. Verify monitoring of access control system status and diagnostics information.

C. Nonconforming Work:

1. Access control equipment will be considered defective if it does not pass tests and inspections.
2. Remove and replace defective units and retest.

D. Collect, assemble, and submit test and inspection reports.

3.3 SYSTEM STARTUP

A. Perform startup service.

1. Complete installation and startup checks in accordance with manufacturer's published instructions.

3.4 ADJUSTING

A. Control Sensor Adjustments: Adjust control devices to suit actual occupied conditions.

1. For proximity motion sensors, verify operation at outer limits of detector range. Set time delay to suit Owner's operations.

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3.5 PROTECTION

A. After installation, protect access control system components from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 281000

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