PART 1 - GENERAL

1.01 SUMMARY

This project is for the General Office Elevator Security Camera and Access Control Systems. The general requirements are stated in this section 260710 and associated sections 262300, 260120, 260130, 260700, and 260178.

A. Provisions of Section 01 apply to this section.

B. Section includes proximity (contact less) card access control equipment, including the following:

1. Provide and install a complete proximity card access control system to operate in conjunction with elevators as shown on the Drawings and as specified herein:

   a. Complete system which includes but is not limited to: equipment, materials, programming, software including upgrading software as deemed necessary, licenses, peripheral devices, all required power supplies, interface with other applicable systems, testing and all labor for a fully operational and tested system in conformity with applicable Codes and authorities having jurisdiction.

   b. Furnish and install new proximity card readers. Coordinate installation with the elevator contractor and vendor.

   c. Furnish and install card reader controllers and other equipment as shown on the Drawings.

   d. Coordinate system with the District’s IT department.

   e. Establish system communication with Card Access Control System Server and panels via the District’s LAN/WAN network.

   f. Furnish and install required interface relays, materials, and cabling if fire alarm panel override of security features is required by the code or by AHJ’s.

   g. Provide installation, testing, adjustment, and programming for all equipment.

   h. Provide written documentation and instructions for system as installed.
i. Provide training to the District in the operation, adjustment, servicing, and repair of this system.

C. Related Sections:

1. The completion of the work described in this Section may require work in or coordination with other Sections of these Specifications. The Contractor and the sub-contractor will be responsible for identifying and including all related work in other Sections of these Specifications and/or drawing necessary for a complete installation of the work described in this Section. These related Sections include but are not limited to the following:

   a. Division 26: Electrical

1.02 SYSTEM DESCRIPTION

A. Elevators in the main building and parking garage and other specified applications shall be equipped with proximity (contactless) card readers that are part of a Network Controlled Card system.

B. The Proximity Card Reader unit will enable the operation of elevator as indicated on the drawings.

C. The proximity card access system shall have an operational architecture composed of a three-tiered or equivalent modular hardware hierarchy and embedded three-tiered software architecture as follows:

   1. Network: The network appliance shall be capable of running on an existing IP network and shall be accessible, configurable, and manageable from any network connected PC with a Internet Explorer 9.0 browser. Browser access for configuration and administration of the system shall be possible from a PC on any subnet, through routers and gateways from other subnets, and from the Internet. Control and management of the system shall be geographically independent.

   2. Data communicated over the system shall be secured via encryption and authentication protocols.

D. The system hardware shall be comprised of a structure that allows for the system to continue operating even during network downtime; the system shall continue to manage access control, and store system activity logs during downtimes, and must be capable of reintegrating the data when connectivity is reestablished.

   1. No additional or separate PC or PC server shall be required for the operation described in item D above.

E. The system software shall use a full feature, high performance database management system, an embedded web server that provides a graphically rich security management application. The security application software shall contain the business logic, which
shall be embedded on the network device and shall not require additional memory or processing power.

1. The operating system shall not require client side software other than a web browser.

F. In new facilities, system labels and devices programming addresses shall be based on final signage and building labeling submittals; for existing facilities contractor shall obtain from Owner Authorized Representative a copy of the current site layout and building labeling designations.

G. Regulatory Requirements: Wiring enclosures, terminal cabinets, control boxes, frames of cabinet racks, and other enclosures shall be grounded in compliance with requirements of the California Electrical Code and local ordinances.

1. System controls shall be UL listed for power limited applications in accordance with California Electrical Code.

1.03 SUBMITTALS

A. Shop Drawings: Submit a complete set of detailed Shop Drawings of operating controls, instrument wiring, schematic diagrams of circuits and interfacing with other ancillary systems. These will be updated to “asbuilts” at completion of the project.

B. Product Data: Submit a complete list of equipment and materials proposed for the system, with catalog cuts, technical data, manufacturer’s specifications, and detail drawings depicting point to point connections.

C. Contractor shall provide a complete point to point interconnection diagram of the proposed elevator access control system for Engineer’s review prior to start of construction.

D. Closeout Submittals shall contain the following documentation:

1. A single reproducible set of up-dated As-built drawings of the system as it was installed, with cable numbers, wire types and quantities, exact location of components and required designations on drawings. The drawings shall be folded and placed in three holes punched protective covers.

2. Test results for each system installed. The test reports shall include specified system operation parameters and system performance results.

3. Provide three copies of the operation, installation and service manuals in a three ring binder each. The manuals shall contain as minimum schematic drawings and equipment manuals, on all types of active and passive equipment installed. Manuals shall include all programmed system passwords. Additionally, the operation and service manuals shall be embedded into the system and be available via logging into the access control system with a web browser at any time. Catalog cut sheets are not acceptable.
4. Provide an electronic copy of the system as As-Built drawings in each manual. CD shall be prepared in the latest version of AutoCAD, and submitted as part of the operations and service manuals in a three hole punched protective cover.

5. A printed copy of the system configuration as programmed, including all system labeling codes, and passwords.

6. An electronic copy on compact disk of the system configuration program.

7. Final test report.

8. Instructions for routine maintenance.

9. Detailed wiring diagram for the connection of relays as applied in the interfacing of peripheral systems or equipment to elevator access control system.

10. Provide codes and passwords for the system at testing.

1.04 QUALITY ASSURANCE

A. Qualifications of Installer: Minimum 5 years experience installing products and systems of similar scope and complexity.

B. Installer shall submit certification from the equipment manufacturer indicating that installer is an authorized representative of the equipment manufacturer and is trained on network applications.

C. Installer shall maintain a fully equipped service organization capable of furnishing repair service to the equipment and shall maintain a spare set of major parts for the system at all times.

D. Installer shall furnish a letter from manufacturer of equipment certifying equipment has been installed according to factory standards and that system is operating properly.

E. All materials and equipment installed shall be new.

F. System installation shall not begin until Shop Drawings are submitted and reviewed by the Owner’s Representative.

1.05 WARRANTY

A. The Equipment Manufacturer shall provide a 1 year material warranty.

B. Installer shall provide a 1 year labor warranty.
PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer’s catalog and system numbers of equipment listed in this specification indicate type, quality, and functions of the equipment required, and represent the minimum acceptable standards. Provide all compatible parts for the submitted system. Acceptable manufacturer include Kantech standard products and or Owner’s approved equal. Deviations from intended functions of specified system are not permitted. Equipment shall not be ordered or installed until such equipment has been reviewed and approved.

B. Equal or better products from other manufacturers may be acceptable subject to Owner’s review and approval.

2.02 NETWORK CONTROLLER

1. Controller: The controller(s) shall be Kantech KT-400, Ethernet ready and capable of supporting four I-Class readers and elevator interfacing with the correct number of expansion modules. Two controllers are required. The one for the four (4) elevators (machine rooms) located in the 10th floor / penthouse will be connected to the existing 10th floor network switch. The other KT-400 controller will be used for the parking level elevator machine room and will be connected to the existing 3rd floor network switch. The three remaining card reader interfaces will be “spares”. Contractor to implement 128-bit encryption on Kantech KT-400 controllers.

2. The Network Controller card shall act as a Node for the cabinet in which it is mounted.

3. Each additional cabinet at a site shall be provided with a Network Node card, which would handle the TCP/IP network communication, store the local database and offline event history, and make all decisions for other blades in the cabinet.

4. Provide a buffer relay for each landing in the access control interface box located in the elevator machine room to isolate low voltage access control system and the elevator controller.

5. Utilize the standard size control cabinet to support up to seven access control cards, which could support up to 14 card readers and provide 28 sets of dry contacts.

6. Proximity card access control equipment cabinets shall be installed in a nearby electrical room, signal terminal room, custodial room or other suitable space as indicated on drawings.

7. Required power supplies including 12VDC batteries.
CARD READERS FOR ELEVATOR ACCESS

A. Card reader shall be of proximity I-Class type and shall be manufactured by Kantech. Reader shall display a green light when access is granted. Card readers shall utilize Weigand-standard interface and be compatible with HID Prox access control cards. Provide and install a Model HID Prox Pro or equal card reader at each elevator in conjunction and with the assistance of the elevator contractor.

1. Coordinate with elevator contractor for proper installation of Card reader inside the elevator.

2. Provide to the elevator contractor a sufficient quantity/length and spools/reels of West Penn six conductor shielded cable for each card reader. The elevator contractor shall install cable within the elevator control raceway and within any additional raceway between each card reader and the access control interface junction box located in the elevator machine room. Cables shall be tagged “B” for the basement “1” for the first floor, “2” for the second floor, etc.

ELEVATOR MACHINE ROOM INTERFACE

A. Provide termination blocks / connectors and a suitable enclosure with secured cover at the Elevator Contractor provided junction boxes provided outside the three elevator machine rooms. Provide an internal layout suitable to provide terminals for each of the card reader’s cables, CCTVs, and buffer relay(s) to enable the call buttons.

1. Utilize Square D type GR6 or equal modular terminal blocks with appropriate mounting hardware in the machine room interface pull box for the card reader cables.

2. Buffer relays shall be Altronix model RBST with LED indicator or equal. Mount buffer relays on designated snap track. A sufficient number of relays must be provided for each elevator (x5) and all designated stops. Contractor to verify actual number on site. Also refer to section 3.03 A.

   a. Buffer Relays designations:

      Provide standard nomenclature for buffer relays to be approved by Owner’s Representative.

   b. The description for elevator stops is as follows:

      i. Parking Garage Elevator #5: 3 stops (P1, P3, P5)
      ii. Lobby Elevator #1: 10 stops (Floor 1, 2, 3,…10)
      iii. Lobby Elevator #2: 10 stops (Floor 1, 2, 3,…10)
      iv. Lobby Elevator #3: 12 stops (Basement, Lobby front elevator door, lobby rear elevator door, Floor 2, 3,…10)
      v. Executive Elevator #4: 9 stops (Floor 2, 3,…10)
B. Buffer relay coils shall be powered from the card reader cabinet power supply.

2.06 WIRING AND WIRING IDENTIFICATION
A. Provide and install all card reader system cabling.
   1. Elevator contractor as part of their work shall install the control cables supplied by the access control contractor between the card reader/CCTV and interface junction box located in elevator machine room.
   2. Access control contractor shall work in conjunction with the elevator contractor to install the new I-Class card readers at each elevator car operating panel.
   3. Wire and cable designations:
      a. Card Reader cables: Shall be per manufacturer’s recommendation or equal as required by model of reader and length of installed cable, identified with a “B” for Basement, “1” for First Floor, “2” for 2nd Floor, etc.
      b. Provide and install a data network cable at each proximity card access control system cabinet and terminate it inside the cabinet on a small surface mounted jack. In addition provide a short patch cable to connect the card access system cabinet and Network Controller or Node Card.

PART 3 - EXECUTION

3.01 GENERAL
A. The proximity card access control system shall not be used for any purpose other than the functions specified.
B. Proximity card access control systems shall be interconnected with but not limited to the following systems:
   1. Elevator controllers for the purpose of granting/ denying employee / visitor access to various floors, restricting hours of operation, and elevator door access control. Refer to Articles 2.06, A-1 and 2.
   2. Other systems or equipment as indicated on the drawings.
3.02 SYSTEM INSTALLATION

A. Install required conductors to devices indicated on Drawings. Provide required conductor terminations to devices for a complete system to function as specified and indicated on Drawings. Refer to Section 260718: Conductors and Cables for Electronic and safety, for installation and color coding requirements.

B. Unless otherwise specified, splices are not allowed in junction boxes. Terminations shall be in terminal cabinets or on equipment terminals.

C. Conductors shall be installed within conduits, boxes, and terminal cabinets in a totally enclosed installation. Furnish and install all conductors required to connect incoming and outgoing circuits, including spare conductors, to terminal strips within cabinets or junction boxes.

D. Wiring within equipment and terminal cabinets shall be installed to conform to contract documentation and CEC standards, and shall be terminated on terminal blocks having terminals for required connections. Wiring shall be cabled, laced, and securely fastened in place so that no weight is imposed on equipment or terminals.

E. Install required terminal blocks within cabinets. Terminal blocks shall be installed on inside back of cabinets only, not on side. Incoming wiring shall be terminated on the left side of terminal blocks; outgoing wiring shall be terminated on the right side of the terminal blocks.

F. Conductors shall be color-coded and tagged with code markers at terminal cabinets, and equipment. A wire index shall be typed and installed on terminal cabinet doors. Index shall be covered with clear plastic adhesive covers. Wiring shall be identified as to building and location of devices in the index.

G. Wiring within equipment and terminal cabinets shall be carefully strapped, and shall be formed in rectangular configuration. Wires shall be properly numbered in numerical order and shall maintain same number throughout the Project site.

H. Complete installation shall comply with local building codes and applicable provisions of the California Electrical Code, California Fire Code and BICSI.

I. Location of outlet boxes and equipment on Drawings is approximate, unless dimensions are indicated. Do not scale Drawings to determine locations and routing of conduits and outlet boxes. Location of outlet boxes and equipment shall conform to architectural features of the building and other Work already in place, and must be ascertained in the field before the start of Work.

J. Drawings generally indicate Work to be provided, but do not indicate all bends, transitions or special fittings required to clear beams, girders or other Work already in place. Investigate conditions where conduits are to be installed, and furnish and install required fittings.
3.03 PROGRAMMING AND OPERATIONAL REQUIREMENTS

A. Each card reader shall be programmed to operate its associated buffer relay on a floor by floor and landing basis for a period of 10 seconds.

1. Individual card readers shall enable the call buttons; card readers shall be programmed and wired to operate its associated buffer relays on a floor per floor basis.

2. Card readers shall be wired and programmed to give audible and visual notification signals to indicate access permission or denial.

3. A single access card shall be programmed to be functional at all card readers, this card will be designated “Elevator Contractor”. The card identification number shall be given to the Owner’s Representative to forward to the District’s Security Director.

4. Coordinate individual cabinet IP addresses, switch port assignments, security settings such as but not limited to SNMP alarm delivery, HTTPS/SSL settings, VLAN assignment and authorized IP address ranges with the District’s Information Technology Division. Coordinate all activities with IT Department.

5. Provide IP address label on the interior of each cabinet door.

B. The system shall support the ability to notify District designated personnel by SMS or Email messages, utilizing the District’s mail server when problems and/or situations that require immediate attention arise.

3.04 TESTING

A. A 48 hour notice shall be provided to the Owner’s Representative before final testing.

B. Testing of elevator card access system shall be as required by the State Fire Marshal and local authorities having jurisdiction. Installer is responsible for identifying required testing, coordinating, scheduling, and conducting tests before Substantial Completion. Tests shall include the following:

1. Operation of all devices.

2. Operation of all system features under normal operation.

3. Operation of all system features on standby power, with primary power turned off.

4. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

5. Open and short (wire only) network communications and verify that signals are received at network nodes or terminals.

6. Check all alert tones and visual indications.
C. Upon completion of installation, provide to the Owner’s Representative a signed, written statement confirming that the equipment was installed in accordance with the Specifications, Shop Drawings, instructions and directions provided by the manufacturer.

D. Demonstrate in presence of the Owner’s Representative that circuit and wiring tests are free of shorts and grounds and that installation performs as specified herein and within manufacturer’s guidelines.

E. Software Modifications:
   1. Provide the services of a factory trained and authorized technician to perform system software modification, upgrades or changes if system fails or does not meet the operational requirements during testing. Response time of the technician to the Project site shall not exceed 24 hours.
   2. Provide hardware, software, programming tools, and documentation necessary to modify the elevator access door control system on the Project site. Modification may include: addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modification on-site. Modification of software shall not require power-down of the system.

3.05 SPARE PARTS
None required.

3.06 SYSTEM USER AND MAINTENANCE PERSONNEL TRAINING AND USER DELIVERABLES
A. Before Substantial Completion, provide one instruction period for the Maintenance and Operations Lock Shop maintenance personnel covering the complete operation and programming of this system.
   1. The instruction period shall be scheduled and coordinated by the Owner’s Representative.

B. All other training materials and required deliverables shall be submitted to the Owner’s Representative for distribution to District’s Shop Supervisor.

3.07 PROTECTION
A. Protect the Work of this section until Substantial Completion.

3.08 CLEANUP
A. Remove rubbish, debris, and waste materials and legally dispose of off Project site.

END OF SECTION 260710