Bid 14-15/01 Consulting Services for Access Control Alarm & Alarm Monitoring

ADDENDUM No. 1

This addendum supersedes items of the original contract documents wherein it is inconsistent with it. All other conditions remain unchanged. The following changes, modifications, corrections, additions or clarifications shall apply to the contract documents and shall be made a part of and subject to all of the requirements thereof as if originally specified or shown. It is the responsibility of the bidder to review the list of attachments to ensure that the addendum is full and complete. This Addendum modifies the original Bid Documents for the above Bid. Acknowledge receipt of this addendum in the space provided on the BID FORM. Failure to do so may subject Bidder to disqualification.

1. Can the approximate size (square footage) and locations (address) of the buildings to be included in this project be provided?

   Answer: See attachment for square footage.

2. Can a full list of interested bidders be provided? How many of these bidders are local to San Francisco?

   Answer: Visit our website at www.peralta.edu, click on “Business Opportunities” located on the Quick Links. The list of bidders is posted under the Bid number.

3. Is there an anticipated budget for this project? Have funds been allocated to cover this project’s costs?

   Answer: The Estimated cost for this project is $750,000 and Yes, the budget has already been set up for this project.

4. Can we obtain questions from other bidders?

   Answer: All questions asked by bidders are in this addendum.

5. Is bonding required for our proposal, as indicated on the cover?

   Answer: No.
6. Beyond these questions, do we need to register anywhere to do business with the District?

Answer: Yes, please visit our website at www.peralta.edu, click on “Business Opportunities” located on the Quick Links, then scroll to the bottom of the page and under “Forms”, click on the “Vendor Application & W-9 Form”.

7. Can more definition to the vulnerability assessment be provided? Is this only for technology? Is it to review Minors on campus, Title IV, Clergy, crime? What is the anticipated deliverable?

Answer: No information is available at this time.

8. Can the Referenced access control standards be provided?

Answer: Please see attached “Peralta Security Performance Specifications”

9. Do you have a preferred list of SBLE’s?

Answer: No, we do not have a preferred SBLE list at the moment.

10. We understand that the current budget for upgrading the access control system at Peralta Community College District is $700,000. This budget does not appear to be sufficient for a complete implementation of a single operational system across the District. Will we be considered responsive if we offer an alternative approach that propose access control upgrades where they are most necessary on a site by site basis which stays within the existing budget, and break out future recommendations that are beyond the current budget?

Answer: Yes, on your bid, list all alternatives which will be considered by the District Committee to reach a decision.

End of Addendum One
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**College of Alameda**

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SECTION 13710

BASIC MATERIALS AND METHODS

PART 1 – GENERAL:

1.1 RELATED REQUIREMENTS:

A. Drawings and specific provisions of this contract, including General Requirements, apply to the work specified in this Section.

1.2 RELATED WORK NOT INCLUDED IN THIS SECTION:

A. General and specific provisions of these Specifications apply to the work specified in this Section, as well as:

1. Security General Requirements (Section 13701)
2. Security Management System (Section 13721)
3. Wire and Cable (Section 13746)

1.3 DESCRIPTION OF WORK:

A. The Contractor shall furnish and install all materials as required to complete the installation as defined in the Drawings and these Specifications.

1.4 REGULATORY REQUIREMENTS:

A. Comply with National Electric Code and state and local codes and ordinances.

B. Materials shall meet with approval of the Division of Industrial Safety, State of Arizona and all governing bodies having jurisdiction.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT:

A. Unless otherwise noted, all materials and equipment shall be new, of the type, capacity, and quality specified and free from defects. Material shall bear the label of, or be listed by the Underwriters' Laboratories unless of a type for which label or listing service is not provided.

B. For compatibility and ease of installation, materials shall be of same brand or manufacturer throughout for each class of material or equipment, wherever possible.

C. All enclosures for all equipment shall be of metal throughout the system.
2.2 CONDUIT:

A. Rigid conduit:

   Shall have UL label, zinc coated exterior, either hot dip galvanized, sherardized, or metallized, and zinc enamel interior; use tapered-threaded fittings only.

B. Electrical Metallic Tubing (EMT):

   Shall have UL label, zinc coated exterior and zinc or enamel interior; exterior and interior fittings for EMT shall be steel gland ring compression type.

C. Flexible Metallic Conduit:

   1. UL label, zinc coated exterior and interior; fittings for flexible conduit shall be "JAKE" or Squeeze type, set screw connectors shall not be used.

   2. Liquid-tight flexible conduit shall be Seal-lite type U.A. with Appleton Series "ST" or Pyle-National Series "CT" connectors.

D. Racks and Trapeze hangers shall only be formed steel channels similar to Unistrut and suspended form threaded rod.

E. Vibration fittings shall be O.Z. Type DX.

F. Outlets and Junction Boxes:

   1. Galvanized or sherardized, one-piece steel, knock-out type.

   2. Size of each box shall be determined in accordance with NEC for number of conductors or number and size of conduits entering box, unless specified larger, but shall be not less than 4 inches square and 1-1/2 inches deep.


   4. Exposed outlet boxes: Case metal with threaded or union hub, Crouse-Hinds type "FS" or "FD" with cast metal covers.

G. Pullboxes:

   1. In no case shall pullboxes be of lesser size or material thickness than required by governing electrical code.

   2. General purpose sheet steel pull boxes shall be furnished with removable screw covers; manufacturer’s standard baked enamel finish.

   3. Weatherproof sheet steel pullboxes shall be fabricated of code gauge, hot-dipped galvanized steel and gasketed weather-tight cover of same materials; manufacturer’s standard baked exterior enamel finish.

   4. Cast metal pullboxes shall be furnished with gasketed covers and necessary drilled and tapped conduit entries; screws shall be bronze or brass.
PART 3 - EXECUTION

3.1 INSTALLATION:

Install materials and equipment in accordance with manufacturer's recommendations, instructions, and industry standards.

3.2 CONDUIT:

A. Rigid Conduit:

1. Shall be used when installation in concrete slabs, encased in concrete below slabs, in concrete or masonry walls, exposed on building exterior, exposed in interior walls below 4'-0" above floor, or if containing power of > 120VAC.

2. Rigid conduit in concrete in contact with earth shall be encased 3 inches on all sides with red mixed concrete envelope. Concrete mix shall be 5.5 sac, using pea gravel as aggregate.

B. EMT:

1. Use only for concealed interior runs or exposed interior runs 4'-0" or greater above floor.

2. EMT may be used on roofs under roofing and where protected by adjacent rigid roof insulation.

3. EMT shall not be cast in concrete slabs or masonry walls.

C. Non-metallic conduit shall be installed underground and in duct-banks.

D. Provide secure mounting facilities for conduits. Wire or plumbers tape shall not be used for hanging of suspended conduit. Conduits shall not be secured to suspended ceiling hanger wires or to suspended ceiling structure.

E. Provide junction or pullboxes to maintain less than 360° total bends and 300' of conduit runs.

F. Provide expansion couplings wherever conduits cross expansion or seismic joints or for continuous straight runs in excess of 100 feet, except when embedded in concrete. Expansion fittings shall have bonding jumper or be of grounding type.

G. Re-route conduit where necessary to clear structural and mechanical obstructions.

H. Install long radius bends in all conduits containing coaxial cabling. Do not flatten or kink bends.

I. Run exposed conduits at right angles or parallel to structural members, walls, floors, and ceilings. Secure conduits 1 inch and smaller with one-hole malleable iron straps. Secure conduits 1-1/4 inches and larger with conduit hangers or two-hole galvanized straps. Support suspended conduits with conduit hangers and 1/4 inch hanger-rods. Rack mount or suspend multiple conduit runs on trapeze hangers with 3/8 inch rods.

J. Conduits installed in concrete, wet locations, exposed to weather, or underground shall have threads filled with red lead and oil before screwing into couplings and threaded fittings.

K. Run conduits in spaces above suspended ceilings parallel to walls and floors.
L. Where more than two conduits are installed in one common concrete envelope, separate conduits with conduit spacers.

M. Provide 1/8" nylon pull cord in all conduits 1" in size or larger for future cable pulls.

N. Fasten conduits to roof and weatherproof-seal conduit penetrations passing through the roof membrane and exterior walls, as directed by the Bank.

O. General purpose sheet steel pullboxes shall be installed only in dry protected locations and shall have removable screw covers.

P. Junction Boxes:
   1. Outlet boxes shall be mounted at vertical center of block where mounted in masonry walls.
   2. Outlet boxes shall be fastened to the structure.

3.3 FIELD QUALITY CONTROL:

A. Tests:
   1. Furnish necessary instruments and equipment required for making tests. Test all wiring for shorts, open circuits or grounding.
   2. Immediately correct any defective work.
   3. When entire installation has been completed, test out circuits and switching, and demonstrate that operation of system is in accordance with the Drawings.

3.4 ADJUSTING AND CLEANING:

A. Clean exposed parts of all equipment and interior of panels and cabinets of dirt, cement and plaster and other materials.

B. Replace or refinish scratched or damaged materials.

END OF SECTION
SECTION 13721

SECURITY MANAGEMENT SYSTEM

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. Drawings and specific provisions of this Contract, including the General Conditions, apply to the work specified in this section.

1.2 RELATED WORK NOT IN THIS SECTION

A. General and specific provisions of these Specifications apply to the work specified in this Section, as well as:

1. Security General Requirements (Section 13701)
2. Basic Materials and Methods (Section 13710)
3. Security Wire And Cable (Section 13746)

1.3 DESCRIPTION OF WORK

A. The work of this contract is to provide, furnish, configure, program and install new Access Control and Alarm Monitoring System (ACAMS) equipment, configured for integration with an existing Lenel OnGuard Enterprise ACAMS in conjunction with specific project requirements for the Peralta Community College District (District).

B. Contractor shall provide all labor, materials, equipment, services, etc., necessary to furnish and install complete and in place all security control devices including, but not limited to:

1. Unless otherwise noted, removal and disposal of existing security device controllers and equipment.

2. Installation, termination, and programming of new intelligent network controllers, intelligent wireless locks, wireless gateways, card readers, electronic locking hardware, door position switches (DPS), request-to-exit (REX) devices, tamper switches, power supplies and associated control equipment and communications cabling, which will operate, control and monitor critical access points as defined by the specific project documents and Drawings.

3. Installation and termination of cabling to provide ACAMS control of existing automatic door operators and door actuators, including integration and termination of relays, door operator controls, door actuators controls, electric lock assemblies and power boosters as required to provide a fully functional system as described. Contractor shall coordinate all integration and termination of ACAMS relay cabling with the District.

4. Installation of new cabling and termination of new cabling to new security devices and existing electronic locking hardware, electronic locking hardware power boosters, transfer hinges and REX switches.

5. Performing end-to-end tests of existing cable pairs, identification and re-termination of existing cabling to new security devices.
6. Configuration and programming of all security devices, both in the field and within the District’s existing ACAMS server.

7. Programming of cardholder access rights within the ACAMS server.

C. Programming of the ACAMS server including, but not limited to the following:
   1. All hardware devices installed as part of each particular project.
   2. All access and user defined authorization levels as coordinated with the District.
   3. Input of alarm condition and response messages as coordinated with the District.
   4. Import and configuration of mapping displays for each building and/or floor with associated icon links which activate on alarm or event conditions.

D. Coordinate exact programming, display and naming convention requirements with the District prior to beginning work.

E. Exact locations for each device will require coordination with the District prior to installation.

F. Perform all tests required herein, or as reasonably required to demonstrate the system is in conformance with the Construction Documents and that its intended operation meets the requirements of any legal authority having jurisdiction.

G. Elements of the work include, but are not limited to, materials, labor, supervision, supplies, equipment, transportation, storage, utilities, and all required licenses.

H. Deliver a complete and operating system as intended, shown, and specified.

I. Exact programming and configuration will require close coordination with the District prior to installation.

J. All nomenclature of all other integrated programming requirements shall be closely coordinated with the District.

K. These Specifications are not meant to be all-inclusive, and the Contractor is required to make adjustments accordingly. Included in the scope of work is all necessary software, hardware, equipment, cabling, connectors, goods and services, etc., whether specified here or not, such that said performance of work fulfills the intent of this Specification and renders this Project complete, functional and fully operational meeting the requirements of the District as a complete Turn-Key project.

1.4 DESCRIPTION OF OPERATIONS

A. Work included: All labor, materials, appliances, tools, equipment, facilities, and services necessary for and incidental to performing all operations of this Section, complete, as shown on the Drawings or specified herein.

B. The system is designed to receive a signal from a card reader, which is activated by an authorized card. Upon a valid authorization, an electronic opening device (i.e., electric lock) is activated to allow access. Should an attempt be made to enter this system with an unauthorized card, the electronic device shall not be activated, thus denying entry. This system is also designed to provide for an override by the security system operator at a remote workstation to
activate the electronic door device, thus allowing access for certain circumstances which are normally not programmed into the system. Each access or denial event shall be logged.

C. All access controlled doors equipped with electric locks, shall be configured so that when a card is presented at a card reader, access shall be granted only if the access code is valid, the I.D. number is found, and it is authorized at that location for that particular period. If all conditions are met, a signal shall be sent to the appropriate control hardware and the associated building DPS shall be shunted and the electric locking device shall be unlocked. Upon opening and closing the door on a valid card read, the electronic locking hardware shall re-lock and the DPS shall resume an armed state.

D. On specific card reader doors, the system shall be configured to allow a “double tap” access event (two valid card reads within a three second window from a card configured to permit double tap functionality) to toggle the associated lock between a lock and an unlocked state. Verify exact locations with the District.

E. The ACAMS shall be configured to provide activation and de-activation of automatic door operators and door actuators provided by the District. Relay integration shall be configured as detailed by the Drawings to provide the following functionality:

1. Exterior door actuators will only be active upon a valid card read, or during a timed unlock of the associated door. Upon a valid card read, the associated doors will unlock allowing the doors to be opened manually or through use of the door actuator for ADA accessibility.

2. The interior door actuators will always be active to allow automated free egress.

3. The interior door actuators shall be wired thru a DPDT relay to allow simultaneous activation of the associated door operator and request to exit input on the ACAMS.

F. All security device events will be monitored and recorded by the ACAMS. Configuration and Programming of the ACAMS to patrician event reporting information based on system user login assignments is required.

1.5 ACAMS HARDWARE AND SOFTWARE

A. The ACAMS server, operating system software and virus protection shall be considered existing for the projects under which these specifications are issued.

1.6 DEVICE HARDWARE REQUIREMENTS

A. Intelligent System Controller Modules (ISC):

1. Provide and install ISC modules at locations shown on the Construction Documents.

B. Dual Reader Interface Modules (DRI):

1. Provide and install DRI modules at locations shown on the Construction Documents.

C. Single Reader Interface Modules (SRI):

1. Provide and install SRI modules at locations shown on the Construction Documents.

D. Input Control Modules (ICM):
1. Provide and install IC modules at locations shown on the Construction Documents.

E. Output Control Modules (OCM):
   1. Provide and install OC modules at locations shown on the Construction Documents.

F. Star Multiplexer Module (SM)
   1. Provide and install SM modules at location shown on the Construction Documents.

G. Card Readers:
   1. Provide and install card readers at locations shown on the Construction Documents.
   2. Card readers shall be powered by 12VDC directly from the DRI.

H. Intelligent Wireless Locks:
   1. Provide and install intelligent wireless locks at locations shown on the Construction Documents.

I. Wireless Gateways:
   1. Provide and install wireless gateways to support intelligent wireless locks at the locations shown on the Construction Documents.
   2. Coordinate termination of wireless gateways to existing Ethernet network switches with the District prior to installation.

J. Request-to-Exit Motion Sensors (R):
   1. Provide and install REX (R) passive infrared motion sensors at locations shown on the Construction Documents, to shunt the associated alarm contact when the system grants access at a controlled point or when valid egress is being made from a controlled point.

K. Request-to-Exit Switches (RX):
   1. Provide and install REX (RX) switches, integral with the associated door locking hardware, at locations shown on the Construction Documents, to shunt the associated alarm contact when the system grants access at a controlled point or when valid egress is being made from a controlled point.

L. Alarm Contacts/Tamper Switches:
   1. Provide and install magnetic alarm contacts at each monitored door at locations shown on the Construction Documents, to detect an unauthorized intrusion into the facility. If a door is illegally opened, the contact shall send a signal to the CPU indicating an alarmed condition.
   2. These alarm contacts shall have the capability of being shunted via a REX device. When the system grants access at a controlled point, it shall shunt the DPS input for that controlled point until the specified shunt time has elapsed, or the door is opened and closed. These DPS shall also be capable of being shunted via the ACAMS client workstation.
3. Tamper switches shall be provided on all security equipment enclosures in every electrical closet.

M. Electronic Lock Hardware:

1. Electric Locks: Provide and install electronic locks at locations shown on the Construction Documents.

2. Electric Strikes: Provide and install electronic strikes at locations shown on the Construction Documents.

3. REX Switches: Unless otherwise noted on the Construction Documents, provide termination of security system cabling to REX switches that are integral with the electric locking hardware at locations shown on the Construction Documents.

4. Power Transfer Hinge: Unless otherwise noted on the Construction Documents, provide termination of security system cabling to power transfer hinges at locations shown on the Construction Documents.

5. Power Boosters: Unless otherwise noted on the Construction Documents, provide termination of security system cabling to power boosters provided by the District at locations shown on the Construction Documents.

6. Door Operators and Door Actuators: Unless otherwise noted on the Construction Documents, provide termination of security system cabling to door operators and door actuators provided by the District at locations shown on the Construction Documents.

7. Electromagnetic Door Holders: Unless otherwise noted on the Construction Documents, provide termination of security system cabling to electromagnetic door holders and door actuators provided by the District at locations.

1.7 POWER SUPPLIES

A. Provide and install 12VDC and 24VDC power supplies for all security devices associated with this project including specified battery back-up at locations shown on the Construction Documents.

1.8 BACKBOARD REQUIREMENTS

A. Plywood backboards shall be provided, as necessary, by the Contractor at a suitable location for mounting equipment panels, power supplies, etc. at the locations shown on the Construction Documents.

1.9 WIREWAY

A. Provide and install wireways at locations shown on the Construction Documents.

1.10 ENCLOSURES

A. Provide and install enclosures at locations shown on the Construction Documents.

B. Utilize existing security equipment controller enclosures as shown on the Construction Documents.
C. Provide and install back panels for existing security equipment controller enclosures as needed. Field verify prior to installation.

1.11 ASSOCIATED EQUIPMENT
A. Relays: Individual cube relays shall be provided by the Contractor as incidental to the project.
B. Terminal Blocks: Terminal blocks shall be provided by the Contractor as incidental to the project.

1.12 NETWORK SWITCHES
A. Procure and deliver Ethernet network switches to the District. The District will install and configure switches.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT
A. Unless otherwise noted on the Construction Documents, all materials and equipment shall be new, of the type, capacity, and quality specified and free from defects. Material shall bear the label of the manufacturer, or be listed by the Underwriters' Laboratories unless of a type for which label or listing service is not provided.
B. Materials shall be of same brand or manufacturer throughout for each class of material or equipment, wherever possible.

2.2 ACAMS SOFTWARE
A. The ACAMS software is existing. Coordinate all programming and configuration requirements with the District prior to commencement of work.

2.3 DEVICE HARDWARE REQUIREMENTS
A. Intelligent System Controller (ISC)
   1. Shall be Ethernet ready.
   2. Shall utilize downstream communication modes of 2-wire RS-485, 2400-38400 bps, asynchronous, half-duplex.
   3. Shall have two (2) unsupervised inputs, dedicated for tamper and UPS fault monitoring.
   4. Shall have eight (8) unsupervised/supervised inputs, standard EOL: 1k/1k ohm.
   5. Shall have four (4) Form-C, 5A @30 VDC, resistive relays.
   6. Shall have two (2) Wiegand reader interfaces.
   7. Primary power shall be 12 to 24 VDC ± 10%, 550mA maximum (plus reader current).
   8. Intelligent System Controller (ISC) shall be Lenel, Model LNL-2220.
B. Dual Reader Interface Module (DRI)
1. Shall have two (2) Wiegand reader interfaces.

2. Shall have eight (8) unsupervised/supervised inputs, standard EOL, 1k/1k ohm, 1% 1/4 watt.

3. Shall have two (2) unsupervised inputs, dedicated for cabinet tamper and UPS fault monitoring.

4. Shall have six (6) Form-C, 5A @ 28 VDC resistive relays.

5. Shall communicate via RS-485 two-wire, 9600 to 115,200 bps.

6. Primary power shall be 12 to 24 VDC + 10%, 550mA maximum (plus reader current).

7. Dual Reader Interface (DRI) shall be Lenel, Model LNL-1320.

C. Single Reader Interface Module (SRI)

1. Shall have one (1) Wiegand reader interfaces.

2. Shall have two (2) unsupervised/supervised inputs, standard ECL, 1k/1k ohm, 1% 1/4 watt.

3. Shall have one (1) unsupervised input, dedicated for cabinet tamper.

4. Shall have two (2) Form-C, 5A @ 28 VDC resistive relays.

5. Shall communicate via RS-485 two-wire, 9600 to 115,200 bps.

6. Primary power shall be 12 to 24 VDC + 10%, 150mA maximum (plus reader current).

7. Single Reader Interface Module (SRI) shall be Lenel, Model LNL-1300.

D. Input Control Module (ICM)

1. Shall have sixteen (16) unsupervised/supervised inputs. Standard EOL: 1k/1k ohm. 1%. ¼ watt.

2. Shall have two (2) outputs, Form-C, 5A @ 28 VDC resistive.

3. Shall have Two (2) unsupervised, dedicated for cabinet tamper and UPS fault monitoring.

4. Primary power shall be 12 to 24 VDC + 10%, 350mA maximum.

5. Input Control Module (ICM) shall be Lenel, Model LNL-1100.

E. Output Control Module (OCM)

1. Shall have sixteen (16) Form-C, 5A @ 28 VDC, resistive relays.

2. Shall have two (2) unsupervised, dedicated for cabinet tamper and UPS fault monitoring.

3. Primary power shall be 12 to 24 VDC + 10%, 1100mA maximum.
4. Output Control Module (OCM) shall be Lenel, Model LNL-1200.

F. Star Multiplexer Module (SM)
1. Shall have four (4) RS-485 Transmit/Receive Ports.
2. Shall have four (4) RS-485 Transmit/Receive or Receive Only Ports.
3. Primary power shall be 12 VDC, 15%. 250 Ma.
4. Star Multiplexer Module (SM) shall be Lenel, Model LNL-8000.

G. Card Readers – Type A (Wall Mount)
1. Shall be mounted as detailed on the Construction Documents.
2. Shall be Wiegand output.
3. Shall be read when presented in any orientation or at any angle to the surface of the reader (maximum read range: 5.5\(^\circ\)).
4. Shall incorporate a tri-state LED on the front of the reader, which shall be configured as follows:
   a. Illuminate steady red when the door is closed and secure.
   b. Illuminate green upon a valid card read, then switch to steady red once the door is opened or the unlock time expires, whichever occurs first.
5. Shall have an audio "beep" tone feature to indicate to the user that the card was read and an access decision was made.
6. Accidental or intentional transmission of radio frequency signals into the reader shall not compromise the system.
7. Shall function in the access control system’s normal or anti-pass back mode without changes to the reader.
8. Damage or vandalism to the reader shall not damage any other part of the access control system.
9. Reader operating temperature ranges shall be -22\(^\circ\)F to +150\(^\circ\)F (-30\(^\circ\)C to +65\(^\circ\)C).
10. Shall be provided in standard black finish.
11. Shall operate on 12VDC supplied directly by the Dual Reader Interface module.
12. Card reader shall be HID Thinline II Reader, Model 5395.

H. Card Readers -- Type B (Mullion Mount)
1. Shall be mounted as detailed on the Construction Documents.
2. Shall be Wiegand output.
3. Shall be read when presented in any orientation or at any angle to the surface of the reader (maximum read range: 6.6\(^\circ\)).

4. Shall incorporate a tri-state LED on the front of the reader, which shall be configured as follows:
   a. Illuminate steady red when the door is closed and secure.
   b. Illuminate green upon a valid card read, then switch to steady red once the door is opened or the unlock time expires, whichever occurs first.

5. Shall have an audio "beep" tone feature to indicate to the user that the card was read and an access decision was made.

6. Accidental or intentional transmission of radio frequency signals into the reader shall not compromise the system.

7. Shall function in the access control system's normal or anti-pass back mode without changes to the reader.

8. Damage or vandalism to the reader shall not damage any other part of the access control system.

9. Reader operating temperature ranges shall be -22\(^\circ\)F to +150\(^\circ\)F (-30\(^\circ\)C to +65\(^\circ\)C).

10. Shall be provided in standard black finish.

11. Shall operate on 12VDC supplied directly by the Dual Reader Interface module.

12. Card reader shall be HID MiniProx Reader, Model 5365.

I. Card Readers – Type C (Wall Mount Card Reader Keypad)

1. Shall be mounted as detailed on the Construction Documents.

2. Shall be Wiegand output.

3. Shall have an integrated weatherized keypad.

4. Shall be read when presented in any orientation or at any angle to the surface of the reader (maximum read range: 5.5\(^\circ\)).

5. Shall incorporate a tri-state LED on the front of the reader, which shall be configured as follows:
   a. Illuminate steady red when the door is closed and secure.
   b. Illuminate green upon a valid card read, then switch to steady red once the door is opened or the unlock time expires, whichever occurs first.

6. Shall have an audio "beep" tone feature to indicate to the user that the card was read and an access decision was made.

7. Accidental or intentional transmission of radio frequency signals into the reader shall not...
compromise the system.

8. Shall function in the access control system's normal or anti-pass back mode without changes to the reader.

9. Damage or vandalism to the reader shall not damage any other part of the access control system.

10. Reader operating temperature ranges shall be -22°F to +150°F (-30°C to +65°C).

11. Shall be provided in standard black finish.

12. Shall operate on 12VDC supplied directly by the Dual Reader Interface module.

13. Card reader shall be HID PoxPro with Keypad Reader, Model 5355.

J. Wireless Locks

1. Shall operate at 900MHz.

2. Shall utilize AES-128bit encryption.

3. Shall verify credential in less than one (1) second.

4. Shall have a minimum capacity of 5,000 card holders.

5. Shall have a minimum wireless communication range of 100'.

6. Shall operate on three (3) AA 1.5V alkaline batteries with a two (2) year battery life.

7. Intelligent lock shall be by Lenel, Model C4P6GL1Cxx0 for Cylindrical and C4P6GF1Cxx0 for Mortise. Confirm finish, handling and handle style on a door by door basis with the District prior to installation.

K. Wireless Gateways

1. Shall operate at 900MHz.

2. Shall utilize AES-128bit encryption.

3. Shall support up to 32 locks.

4. Shall be 10/100Mbps (autosensing).

5. Input power shall be IEEE 802.3af PoE.

6. Wireless Gateway shall be by Lenel, Model ILS-C4XCMWAPE Wireless Gateway.

L. Alarm Contacts

1. Type A -- Recess Mounted:
   
   a. Shall be single-pole, double throw (SPDT) unit.
b. Shall provide dual circuit operation to provide operation suitable for a line supervision circuit.

c. Switches shall be capable of initiating an alarm signal when the protected door is opened 1" on the latch side.

d. Shall be installed in the door header and the associated magnet shall be installed in the door.

e. Alarm contact shall be by Sentrol, Model 1076CW.

2. Type B – Surface Mounted

a. Shall be single-pole, double throw (SPDT) unit.

b. Shall provide dual circuit operation suitable for a line supervision circuit.

c. Capable of initiating an alarm signal when the protected door is opened 2-1/2" on the latch side.

d. Shall be surface mounted to the door frame and the associated magnet shall be surface mounted to the door.

e. Shall be equipped with an armored cable jacket.

f. Alarm contact shall be by GE, Model 2507AD. (with mounting kit where required).

3. Type D – Roll Door

a. Shall be single-pole, double throw (SPDT) unit.

b. Loop type shall be Open or Closed.

c. Gap distance shall be up to three (3) inches.

d. Lead type shall be eighteen (18) inches flexible stainless steel cable.

e. Shall be of aluminum construction.

f. Shall be aluminum color.

g. Alarm contact shall be GE, Model 2204AU-L.

4. Type D – Tamper

a. Shall be single-pole, single throw (SPST) unit.

b. Shall be capable of initiating an alarm signal when the protected door is opened 3/8".

c. Shall be installed inside enclosures requiring a tamper switch.

d. Tamper shall be by Sentrol, Model 3025T.

M. Request-To-Exit Motion Sensor – Type A (R)
1. Shall operate at 2 or 24 VAC/DC.
2. Shall have two (2) Form C relay contacts.
3. Shall have selectable relay latch times.
4. Shall have sensor programmable features for fail-safe or fail-secure modes.
5. Request-To-Exit sensor shall be by Bosch, Model DS 150i

N. Request-To-Exit Motion Sensor – Type B (R)
1. Shall be powered by 12 or 24 VAC/DC.
2. Shall have two (2) Form-C relay contacts.
3. Request-To-Exit shall be by Thermocon, Model T-90 SPDT/POT.

O. Electronic Lock Hardware (Strikes)
1. Electric Strikes: Provide and install electronic strikes at locations shown on the Construction Documents.
2. Shall be tamper resistant.
3. Shall have static strength of 1500 lbs.
4. Shall have dynamic strength of 70 ft.-lbs.
5. Shall have endurance of 500,000 cycles.
6. Shall be fail safe.
7. Shall be 24VDC/VAC.
8. Door Operators and Door Actuators: Door operators and door actuators shall be existing as provided by the District. Unless otherwise noted on the Construction Documents, Contractor shall provide disassembly and re-assembly as required to provide final termination of ACAMS cabling to the door operators and door actuators.
9. Electronic lock hardware shall be by VON DUPRIN, Model 6210 FSE 24VDCxxxx or approved equal. Provide all associated lock accessories needed to render the strike fully functional. Confirm finish and handling on a door by door basis with the District prior to installation.

P. Electronic Lock Hardware
1. Electric Locks: Provide and install electronic locks at locations shown on the Construction Documents.
2. REX Devices: Unless otherwise noted on the Construction Documents, REX devices shall be integrated with new electric lock hardware. Contractor shall provide disassembly and re-assembly as required to provide final termination of ACAMS cabling to the REX devices of existing electronic lock hardware.
3. Power Transfer Hinge: Unless otherwise noted on the Construction Documents, Contractor shall provide disassembly and re-assembly as required to provide final termination of ACAMS cabling to the transfer hinges.

4. Power Booster: Power booster shall be existing as provided by the District. Unless otherwise noted on the Construction Documents, Contractor shall provide disassembly and re-assembly as required to provide final termination of ACAMS cabling to the power boosters.

5. Door Operators and Door Actuators: Door operators and door actuators shall be existing as provided by the District. Unless otherwise noted on the Construction Documents, Contractor shall provide disassembly and re-assembly as required to provide final termination of ACAMS cabling to the door operators and door actuators.

6. Electronic Lock hardware shall be Von Duprin, Model E99xxxxx. Confirm electric lock configuration, finish, housing and handle type and style on a door by door basis with the District prior to installation.

2.4 POWER SUPPLIES

A. TYPE A – Power Supply (Field Processors):
   1. Shall be UL listed.
   2. Shall provide 12VDC/24VDC at 6 Amp continuous current.
   3. Shall be supplied in a metal enclosure.
   4. Shall include two (2) eight (8) port power distribution boards.
   5. Shall be equipped with a Type B alarm contact as specified in this Section.
   6. Power supply shall be by Altronix, Model AL600ULX-PD16.

B. TYPE B – Power Supply (12 VDC Field Devices):
   1. Shall be UL listed.
   2. Shall provide 12/24VDC at 6 Amp continuous current.
   3. Shall be supplied in a metal enclosure.
   4. Shall include two (2) eight (8) port power distribution boards.
   5. Shall be equipped with a Type B alarm contact as specified in this Section.
   6. Power supply shall be by Altronix, Model AL600ULX-PD16.

C. TYPE C – Power Supply (24 VDC Field Devices):
   1. Shall be UL listed.
   2. Shall provide 24VDC at 10 Amp continuous current.
3. Shall be supplied in a metal enclosure.
4. Shall include two (2) eight (8) port power distribution boards.
5. Shall be equipped with a Type C alarm contact as specified in this Section.
6. Power supply shall be by Altronix, Model AL1024ULX-PD16.

D. TYPE D – Power Supply (Locks):
   1. Shall be UL listed.
   2. Shall provide 24VDC at 10 Amp continuous current.
   3. Shall be supplied in a metal enclosure.
   4. Shall include two (2) eight (8) port power distribution boards.
   5. Shall be equipped with a Type C alarm contact as specified in this Section.
   6. Power supply shall be by Altronix, Model AL1024ULX-PD16.

2.5 BACKBOARD REQUIREMENTS

A. Provide and install plywood backboards at locations as shown on the Construction Documents.

B. The following backboard requirements must be met:
   1. Backboards shall be 3/4" thick, fire resistant plywood with two (2) coats of painted finish on both sides to match the color of the walls on which they are installed.
   2. Plywood shall be installed with "A" side out. Plywood shall additionally be masked as required to allow visual verification of grade stamping.
   3. Mount backboard at +6" min. above floor, unless otherwise noted on the Construction Documents.

2.6 WIREFWAYS

A. Type – A:
   1. Wireway shall be metal in construction with a standard powder coat finish.
   2. Wireway shall be 4" x 4" x 72".
   3. Wireway shall be by Hoffman, Model F44T172GVP.

B. Type – B:
   1. Wireway shall be metal in construction with a standard powder coat finish.
   2. Wireway shall be 4" x 4" x 48".
   3. Wireway shall be by Hoffman, Model F44T148GVP.
2.7 ENCLOSED

A. Large Type 1
   1. Shall be of 14 gauge steel.
   2. Shall have continuous hinge on door.
   3. Shall have mounting holes on back of enclosure.
   4. Shall be secured by lock cylinder.
   5. Shall utilize back panel.
   6. Shall be equipped with a Type C alarm contact as specified in this Section.
   7. Enclosure shall be by Hoffman, Model A48N3609. Back panel shall be by Hoffman, Model A42P36. Lock cylinder shall be by Hoffman, Model AL12AR.

B. Medium Type 1
   1. Shall be of 14 or 12 gauge steel.
   2. Shall have doors with butt hinges.
   3. Shall have mounting holes on back of enclosure.
   4. Shall be secured by lock cylinder.
   5. Shall utilize back panel.
   6. Shall be equipped with a Type C alarm contact as specified in this Section.
   7. Enclosure shall be by Hoffman, Model A16N20ALP. Back panel shall be by Hoffman, Model A16N20MP. Lock cylinder shall be by Hoffman, Model AL12AR.

C. Small Type 1
   1. Shall be of 16 gauge steel.
   2. Shall have doors with butt hinges.
   3. Shall have mounting holes on back of enclosure.
   4. Shall utilize back panel.
   5. Enclosure shall be by Hoffman, Model A6N64. Back panel shall be by Hoffman, Model ASN6P.

D. Back Panels (For Existing Enclosures)
   1. Provide and install back panels for existing enclosures as shown on the Construction Documents. Field verify prior to installation, provide as needed.
2.8 ASSOCIATED EQUIPMENT

A. Relays
   1. Individual cube relays shall be provided by the Contractor as incidental to the project.
   2. Where required, relays shall be by idec.

B. Terminal Blocks
   1. Terminal blocks shall be provided by the Contractor as incidental to the project.
   2. Where required, terminal blocks shall be by Phoenix.

2.9 NETWORK SWITCHES

A. 48 Port Stackable PoE Ethernet Switch.
   1. Shall be rack mountable.
   2. Shall be stackable.
   3. Shall have 48 x RJ45 Ports.
   4. Shall be PoE enabled.
   5. Shall be 10/100/1000 Mbps.
   6. Shall have VLAN Support.
   7. Shall be SNMP enabled.
   8. Power shall be 100 to 240 VAC.
   9. 48 Port Stackable PoE Ethernet Switch shall be Cisco, Model WS-C2960S-48FPD-L.

B. 24 Port Stackable PoE Ethernet Switch.
   1. Shall be rack mountable.
   2. Shall be stackable.
   3. Shall have 48 x RJ45 Ports.
   4. Shall be PoE enabled.
   5. Shall be 10/100/1000 Mbps.
   6. Shall have VLAN Support.
   7. Shall be SNMP enabled.
   8. Power shall be 100 to 240 VAC.
9. 24 Port Stackable PoE Ethernet Switch shall be Cisco, Model WS-C2960S-24PD-L.

2.10 ELECTRICAL REQUIREMENTS (120VAC)

A. Unless otherwise noted on the Construction Documents, all 120VAC shall be considered existing at locations requiring installation of security equipment, power boosters and power supplies.

B. The Contractor shall check the adequacy of all power and wiring before making final connections and applying power to the equipment.

C. The Contractor shall be responsible for terminating existing 120VAC power to all power supplies, devices, and other security equipment as required. The Contractor shall provide conduit, wiring and connections from 120VAC junction boxes supplied by the District to each security component noted on the Construction Documents. Should the Contractor not possess the necessary licenses to install and terminate 120VAC wiring, Contractor shall be responsible for hiring a subcontractor as required to complete this work.

D. Contractor shall not be responsible for conduit, wiring and connections associated with terminating 120VAC to power boosters and door operators supplied by the District.

PART 3 - EXECUTION

3.1 GENERAL

A. The Contractor shall have at least one Lenel Master Certified factory trained representative on-site during all programming and configuration activity.

B. Perform all work in accordance with acknowledged industry and professional standards and practices and the procedures specified herein.

C. A complete, operating system shall be provided. Include all devices specified including basic components and accessories, interconnecting wiring and other equipment and installation devices necessary for a complete system as specified.

3.2 SECURITY DOOR CONTROL AND MONITORING DEVICES

A. INSTALLATION

1. Install materials and equipment in accordance with manufacturer’s recommendations, instructions, and industry standards.

2. Install and terminate devices straight, level and plumb to walls, doors, finished ceiling and/or finished floors, as applicable.

3. Coordinate the installation, termination and testing of all devices with the District.

4. Card readers shall be installed flush-mounted (unless otherwise noted), to new junction boxes. Contractor shall terminate all wiring and test card reader prior to installation.

5. Run all wiring from each card reader door to its respective wireway, DRI, power supply or security equipment enclosure with no splices or termination points in between, as designated on the Construction Documents.
6. Install new end of line resistors (EOL), at the device to provide 4-state supervision monitoring of all installed devices.

7. Install, terminate and test all devices and EOL resistors such that desired conditions occur upon activation, which are within the manufacturer's performance specifications.

8. Adjust pattern and sensitivity of all devices to achieve desired coverage area, where applicable.

9. All relays, whether specified herein or not, shall be provided by the Contractor as incidentals to the project.

10. No splices shall be made except as required to terminate devices. All connections made at devices shall be soldered and encapsulated by clear heat shrink tubing. Wire nuts, bean connectors, barrel connectors, crimp connectors, etc. shall not be accepted.

B. PROGRAMMING

1. System programming shall only be performed by a Lenel Master Certified factory trained representative.

2. Coordinate all programming activities with the District prior to commencement of programming.

3. Programming shall include but not be limited to:
   a. All ACAMS devices existing and new.
   b. Access privileges, groups and assignments.
   c. Monitoring group and partition assignments of ACAMS devices on a global, per campus, per area, and per building basis.
   d. Any other programming activity that may be required to render the system 100% functional and intended, designed and shown.

C. TESTING

1. Terminate and test all alarm contacts such that alarm conditions occur upon door actuation, which are within the manufacturer's performance specifications.

2. Furnish all necessary instruments and equipment required for conducting tests. Test all wiring for shorts, open circuits or grounding.

3. When entire installation has been completed, test out circuits and demonstrate that operation of system is in accordance with the Construction Documents.

END OF SECTION
SECTION 13746
SECURITY WIRE AND CABLE

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. Drawings and specific provisions of this Contract, including other Sections, apply to the work specified in this Section.

1.2 RELATED WORK NOT IN THIS SECTION

A. General and specific provisions of these Specifications apply to the work specified in this Section, as well as:

1. Security General Requirements (Section 13701)
2. Basic Materials and Methods (Section 13710)
3. Security Management System (Section 13721)

1.3 DESCRIPTION OF WORK

A. All labor, materials, appliances, tools, equipment, facilities, transportation, and services necessary for, or incidental to, performing all operations of the work of this Section, complete, as shown on the Construction Documents or specified herein. Work includes, but is not limited to, the following:

1. Furnish and install all data, signal and security power cabling as required on the Construction Documents.
2. Perform end-to-end tests of cable pairs, and verify assignments and terminations. Provide documentation of testing and submit to the Owner and Security Consultant for approval and verification.
3. The entire system shall be supported by engineering documentation in accordance with the provisions of these Specifications, specifically including:
   a. Wiring diagrams showing all devices, terminations, and interconnections.
   b. Connection diagrams showing interfaces between the devices, panels, and system head-ends.
   c. Cable assignments and terminations, showing all pair assignments and termination locations.

1.4 REGULATORY REQUIREMENTS

A. Comply with the California Electric Code (CEC) and state codes and ordinances.

B. Where required, materials shall be listed by Underwriter's Laboratories (U.L.) and shall bear the U.L. Inspection Label.
C. Materials shall meet with approval of the Division of Industrial Safety, State of California and all governing bodies having jurisdiction.

D. Where required, the Contractor shall use plenum rated cabling and support devices which conforms to the CEC.

1.5 PRODUCT HANDLING

A. Deliver materials to job site in original, unbroken packages, properly tagged with U.L. label, size, type, and manufacturer indicated.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Unless otherwise noted, all materials and equipment shall be new, of the type, capacity, and quality specified and free from defects. Material shall bear the label of, and be listed by, the Underwriters’ Laboratories unless of a type for which label or listing service is not provided.

B. Wire and Cable

1. Security Signal Cabling – Type A:
   a. All security signal cabling shall be West Penn Model 221, 22 AWG, 2 conductors, twisted, non-shielded, or equal.

2. Communication Cabling – Type B:
   a. All security signal cabling shall be West Penn Model 291, 22 AWG, 2 conductors, twisted, shielded, or equal.

3. Security Power (12/24 VAC/VDC) Cabling – Type C:
   a. Unless otherwise specified, all 24 VAC/VDC security power cabling shall be West Penn Model 224, 18 AWG, 2 conductors, stranded, non-shielded, or equal.

4. Security Reader Cabling – Type D:
   a. Unless otherwise specified, all security reader cabling shall be West Penn Model 3270, 22 AWG, 6 conductors, stranded, shielded, or equal.

5. Ethernet Cabling – Type E:
   a. Unless otherwise specified all Ethernet cabling shall be Panduit, Model UTPSPxxxY. Confirm length and color with District prior to installation.

2.2 CABLE LABELING

A. Labels shall be a self-laminating vinyl.

B. Labels shall have a white background for printing and a clear tab to protect the printed text.
C. Labels shall be a minimum of 1” wide and 1-1/4” long, the printec area shall be no less than ½” high.

D. Generate labels using a handheld Brady I.D. Pro-plus labeler Model ID PRO-PLUS, or equal.

E. Labels shall be by Brady, Model number WML-311-292, or equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Contractor shall be responsible for delivery, storage, protection, and placing of all equipment and materials.

B. Contractor shall install materials and equipment in accordance with manufacturer's recommendations, instructions, and industry standards.

C. All cables shall be connected to terminal strips/blocks or to equipment via suitable factory-furnished or locally furnished connectors. Cable to rack-mounted equipment shall be long enough to allow complete removal of equipment, even if rear access is totally restricted.

D. All intra-rack wiring shall be neatly strapped, dressed, and supported. Terminal blocks, boards, strips, or connectors shall be supplied for all cables that enter or leave racks, enclosures or equipment modules. Cables shall be grouped according to signals carried.

E. NEC approved hangers and strapping devices shall be utilized for installation of wire and cable in ceiling.

3.2 INSTALLATION OF CONDUCTORS

A. Conductors shall be continuous between outlets or junction boxes and no splices shall be accepted.

B. For wire training and clamping in cabinets and enclosures, use nylon cable ties, bundling no more than four (8) conductors per bundle to facilitate manual tracing of conductors.

C. Open cable runs shall be supported independently. Provide 12 gauge ceiling wires with “Caddy” type clips and/or bridle rings as required (10’ maximum spacing).

D. Use stranded #14 AWG conductors for power circuits.

E. Bundle and lace conductors neatly in cable tray racks, panels, cabinets, and equipment.

F. The Contractor for properly securing hanging fixtures, equipment, and outlets shall provide mounting facilities. Provide sleeves, inserts, expansion bolts, and all components required.

G. No splices shall be made except as required to terminate devices. All connections made at devices shall be soldered and encapsulated by clear heat shrink tubing. Wire nuts, bean connectors, barrel connectors, crimp connectors, etc. shall not be accepted.

3.3 LABELING

A. Cable labeling shall be keyed to the Drawings, as approved by the Owner, such that at each
cable end, origination and destination can be quickly and clearly ascertained. Spare cables shall be so identified.

B. Label text shall be printed utilizing the "SMALL" text size setting.

C. Label text shall be printed on three lines utilizing the "WIRE" setting.

D. Label shall be affixed to cable jacket no more than 1" from where jacket is stripped back to allow ease of cable identification.

E. Label shall be affixed to cable jacket by adhering the white printed portion of the label directly to the jacketing and then wrapping the clear portion of the label around and over the white printed portion to protect the printed text of the label.

F. Label shall be positioned so that it can be easily read without needing to adjust or reposition label or surrounding cabling.

3.4 FIELD QUALITY CONTROL

A. Tests:

1. Furnish all necessary instruments and equipment required for conducting tests. Test all wiring for shorts, open circuits or grounding.

2. Immediately correct any defective work.

3. When entire installation has been completed, test out circuits and demonstrate that operation of system is in accordance with the Construction Documents.

3.5 ADJUSTING AND CLEANING

A. Clean exposed parts of all equipment and interior of panels and cabinets of dirt, cement and plaster and other materials.

B. Replace or refinish scratched or damaged materials.

END OF SECTION