

P██████████ **4J S**██████████ **I** ██████████ ██████████ **P**██████████ (2207)

T██████ **A**██████████ **N**██████████ **N**██████████ **005**

Date: April 14, 2023

From: KC Eck, PIVOT Architecture

To: Interested Bidders

1. General Information

This addendum is in response to revisions requested by the client.

2. Response to Bidder Questions

N/A

3. Approved Substitution Request

1. N/A

4. Alternates

1. N/A

5. Changes to the Project Manual

1. REPLACE Section 28 1500 - Security Management System Hardware Devices

6. Changes to the Drawings

- 1. REPLACE sheet E12-A - TECHNOLOGY RISER DIAGRAMS - SHELDON
- 2. REPLACE sheet E12-B - TECHNOLOGY RISER DIAGRAMS S-EUGENE
- 3. REPLACE sheet E12-C - TECHNOLOGY RISER DIAGRAMS - CHURCHILL

End of Addendum 005

**SECTION 28 1500
SECURITY MANAGEMENT SYSTEM HARDWARE DEVICES**

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Enclosure and Power Supplies
 - 2. Intelligent Network Controllers
 - 3. Door Controllers
 - 4. Card readers
 - 5. Door position switches
 - 6. Cables

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The following documents shall also be considered as a part of and shall relate directly to this section:
 - 1. Section 28 0000 - GENERAL REQUIREMENTS FOR ELECTRONIC SAFETY & SECURITY SYSTEMS
 - 2. Section 28 1300 - SECURITY MANAGEMENT SYSTEM

1.03 DEFINITIONS

- A. Credential: Data assigned to an entity and used to identify that entity.
- B. Identifier: A credential card; keypad personal identification number; or code, biometric characteristic, or other unique identification entered as data into the entry-control database for the purpose of identifying an individual. Where this term is presented with an initial capital letter, this definition applies.
- C. Location: A Location on the network having a PC-to-controller communications link, with additional controllers at the Location connected to the PC-to-controller link with a TIA 485-A communications loop. Where this term is presented with an initial capital letter, this definition applies.
- D. PC: Personal computer. Applies to the central station, workstations, and file servers.
- E. RAS: Remote access services.
- F. RF: Radio frequency.
- G. TCP/IP: Transport control protocol/Internet protocol.
- H. Wiegand: Patented magnetic principle that uses specially treated wires embedded in the credential card.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Reference each product to a location on Drawings. Test and evaluation data presented in Product Data shall comply with SIA BIO-01.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Diagrams for cable management system.
 - 2. System labeling schedules, including electronic copy of labeling schedules that are part of the cable and asset identification system of the software specified in Parts 2 and 3.
 - 3. Wiring Diagrams. For power, signal, and control wiring.

1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For security system to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 01 7823 "Operation and Maintenance Data," include the following:
 - 1. Hard copies of manufacturer's specification sheets, operating specifications, design guides, user's guides for software and hardware, and PDF files on USB media of the hard-copy submittal.
 - 2. System installation and setup guides with data forms to plan and record options and setup decisions.

1.06 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Credential card blanks, ready for printing. Include a total of one-hundred cards. Coordinate all card options including but not limited to magnetic stripe, slot punching and keyfob alternatives with the Owner prior to ordering.
 - 2. Fuses of all kinds, power and electronic, equal to 10 percent of amount installed for each size used, but no fewer than three units.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Source Limitations: Obtain central station, workstations, controllers, Identifier readers, and all software through one source from single manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store in temperature- and humidity-controlled environment in original manufacturer's sealed containers. Maintain ambient temperature between 50 and 85 deg F, and not more than 80 percent relative humidity, noncondensing.
- B. Open each container; verify contents against packing list; and file copy of packing list, complete with container identification, for inclusion in operation and maintenance data.
- C. Mark packing list with the same designations assigned to materials and equipment for recording in the system labeling schedules that are generated by software specified in "Cable and Asset Management Software" Article.
- D. Save original manufacturer's containers and packing materials and deliver as directed under provisions covering extra materials.

1.09 PROJECT CONDITIONS

- A. Environmental Conditions: System shall be capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:
 - 1. Control Station: Rated for continuous operation in ambient conditions of 60 to 85 deg F and a relative humidity of 20 to 80 percent, noncondensing.

PART 2 PRODUCTS

2.01 OPERATION

- A. Security access system hardware shall use a single database for access-control and credential-creation functions.

2.02 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70, "National Electrical Code."

2.03 ENCLOSURE AND POWER SUPPLIES

- A. Approved Manufacturers:
 - 1. Lenel LNL-AL600ULX-4CB6 (Panels and Panel Power)
 - a. Complete with ABT-12 Battery Backup Option

2. Altronix Maximal 33E (Electric Strike Power)
 3. Engineer approved equal
- B. Enclosure Description:
1. Dimensions: 18.25" W x 24.25" H x 4.5" D
 2. Capacity: Integral Standoffs to host five (1) dual reader controllers, one (1) intelligent system controller and 12VDC power supply.
 3. Protected AC cover with on/off circuit breaker for maintenance safety
 4. Pre-drilled mounting holes for field upgrades.
 5. Removable door with "fast disconnect" ground strap.
 6. Multiple knockouts on all four sides.
- C. Quantity: Provide enclosure and power supply quantities as required for a completed installation.

2.04 NOT USED.

2.05 DOOR CONTROLLERS

- A. Approved Manufacturers:
1. Lenel LNL1320
 2. Engineer approved equal
- B. General Description:
1. The peripheral interface device shall provide a solution for interfacing to TTL/Wiegand/RS-485 type readers and door hardware. The intelligent controller shall accept data from a reader with clock/data, Wiegand or RS-485 signaling, provide a tri-stated LED control and buzzer control. It shall also provide six
 2. Form-C relay outputs and eight supervised inputs for monitoring. The controller shall communicate via a 2-wire RS-485 interface.
- C. Technical Description and Specifications:
1. Primary Power:
 2. 12-24VDC $\pm 10\%$, 550mA maximum, plus reader current
 3. 12VDC at 450mA nominal, plus reader current
 4. 24VDC at 270mA nominal, plus reader current
 5. Communication: 2-wire RS-485, 4,000 feet using Belden 9841
 - a. Reader Interface: two reader ports, data card/keypad, clock/data, data-1/data-0, or 2-wire RS-485
 - b. LED: one-wire bi-color LED support or two-wire
 - c. Buzzer: one-wire LED mode
 - d. Keypad: 8-bit Mercury, 8-bit Dorado, or 4-bit HID
 - e. Reader Power:
 - 1) Pass through or 12Vdc regulated power, 125mA each reader
 - f. Inputs: eight general purpose programmable type and two dedicated for tamper and power monitor
 - g. Outputs: six relays - Form-C, 5 Amps at 28Vdc
 - h. Temperature: 0 to 70 degrees Centigrade operational, -55 to 85 degrees Centigrade storage
 - i. Humidity: 10-95 percent RHNC
- D. Features:
1. Card Formats:
 - a. Eight active card formats per intelligent controller
 - b. 19 digit (64-bit) User ID and 15 digit PIN numbers maximum
 - c. PIV-II, CAC, TWIC card compatible
 2. Card Reader Functions
 - a. Multiple card format support by reader
 - b. Paired reader support

- c. Alternate reader support
- d. Turnstile support
- e. Biometric device support
- f. Keypad support with programmable user commands, card input
- g. Shunt relay support
- h. Strike follower relay support
- 3. Database Functions
 - a. Supports up to nineteen (19) digital card numbers
- 4. Intrusion Alarm Functions
 - a. Supports entry delays and exit delays
 - b. Provides control and alarm processing from the keypad
- 5. Offline mode operation
 - a. Door mode
 - 1) Unlocked, locked, facility code only
 - 2) Relay Mode
 - (a) Programmable for offline conditions

2.06 CARD READERS (OFCI)

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Hughes Identification Devices (HID) 920PTNTEK00000 RP40. (Owner-furnished, contractor-installed)
 - 2. Engineer Approved Equal
- B. Card-Reader Power: Powered from its associated controller, including its standby power source, and shall not dissipate more than 5 W.
- C. Response Time: Card reader shall respond to passage requests by generating a signal that is sent to the controller. Response time shall be 800 ms or less, from the time the card reader finishes reading the credential card until a response signal is generated.
- D. Communication Protocol: Compatible with local processor.

2.07 DOOR POSITION SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Aritech
 - a. Recessed: Product No. 1078CW (For doors with a channel at the top utilize 1840 Rare Earth Magnet)
 - b. Surface: Aritech 2505A-L
 - 2. Engineer Approved Equal
- B. Flush-mount: Provide recessed ¾" magnetic reed switch set for all hollow frame applications. Utilize double pole double throw switches to allow for an additional set of contacts.
- C. Surface-mount: Provide surface mount magnetic reed switch set for all filled frames in which a concealed pathway is not possible. Utilize double pole double throw switches to allow for an additional set of contacts.
- D. Overhead door: Provide surface mounted and extruded aluminum floor mounting door contacts for overhead door monitoring applications. Utilize double pole double throw switches to allow for an additional set of contacts.

2.08 SWITCHES & PUSHBUTTONS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following suited for this listed application:
 - 1. Door Lockdown (LD): Pass & Seymour 1250-Red with Pass & Seymour WP1
 - a. Single pole, double throw 15A rated, 120/277V manual switch, red finish. Provide with dustproof stainless steel cover engraved with red lettering stating "EMERGENCY LOCKDOWN".
 - 2. Door Lockout (LO): Pass & Seymour 1250-Red with Pass & Seymour WP1

- a. Single pole, double throw 15A rated, 120/277V manual switch, red finish. Provide with dustproof stainless steel cover engraved with red lettering stating "EMERGENCY LOCKOUT".
- 3. Momentary Door Release (MDR): Owner-furnished, contractor-installed.

2.09 VISUAL NOTIFICATION DEVICE

- A. Manufacturers: Subject to compliance with requirements, provide products by the following suited for this listed application:
 - 1. Lockdown-Lockout Indicator Light: Federal Signal SLM 1450 (Fresnel)
 - a. Multicolor multifunctional LED beacon. Multichannel technology allowing up to three (3) separate levels of alarm controllable via wiring selection. Each channel capable of selecting unique color (amber, blue, clear, cyan, green, magenta, red, yellow), flash pattern (steady, 1x, 3x, 5x, random flash) and light output brightness (33%, 66%, 100%) via integrated buttons.
 - b. In coordination with 4J school district, wire and program to provide functionality as follows:
 - 1) State of lockdown: Blue color, steady flash pattern, 100% brightness
 - 2) State of lockout: Red color, steady flash pattern, 100% brightness

2.10 CABLES

- A. General Cable Requirements: Provide a plenum rated solution that complies with the security management system manufacturer's recommendations for each application. Providing individual pair and multi-pair cables or a composite cable is an approved method.
- B. Review all amperage and distance requirements for proper wire gauge selection. Coordinate this selection with the specified electrified door hardware.
- C. 4J Standards:
 - 1. Card Reader: 22 AWG, 8-Conductor, Stranded, Shielded with orange jacket.
 - 2. Power to Electric Strikes: 16 AWG, 2-Conductor, Stranded with orange jacket.
 - 3. Door Contacts: 22 AWG, 4-Conductor, Stranded with orange jacket.
 - 4. Request-to-exit Devices: 22 AWG, 4-Conductor, Stranded with orange jacket.
 - 5. Door Lockdown/Lockout Devices: 22 AWG, 4-Conductor, Stranded with orange jacket.
 - 6. Momentary Door Release: 22 AWG, 4-Conductor, Stranded with orange jacket. (Verify with owner-furnished equipment)
 - 7. Door Lockdown/Lockout Indicator Light: 18 AWG, 4-Conductor, Stranded with orange jacket.
- D. Cabling routed in conduit underground shall also be outdoor-rated.

2.11 TRANSFORMERS

- A. NFPA 70, Class II control transformers, NRTL listed. Transformers for security access-control system shall not be shared with any other system.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine pathway elements intended for cables. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation.
- B. Examine rough-in control cable conduit systems to PCs, controllers, card readers, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Comply with recommendations in SIA CP-01.

- B. Comply with TIA 606-B, "Administration Standard for Commercial Telecommunications Infrastructure."
- C. Product Schedules: Obtain detailed product schedules from manufacturer of access-control system or develop product schedules to suit Project. Fill in all data available from Project plans and specifications and publish as Product Schedules for review and approval.
- D. In meetings with Architect and Owner, present Product Schedules and review, adjust, and prepare final setup documents. Use approved, final Product Schedules to set up system software.

3.03 CABLING

- A. Comply with NECA 1, "Good Workmanship in Electrical Construction."
- B. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters. Conceal raceway and wiring except in unfinished spaces.
- C. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Use NRTL-listed plenum cable in environmental airspaces, including plenum ceilings. Conceal raceway and cables except in unfinished spaces.
- D. Boxes and enclosures containing security-system components or cabling, and which are easily accessible to employees or to the public, shall be provided with a lock. Boxes above ceiling level in occupied areas of the building shall not be considered accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public shall be covered with a suitable cover plate and secured with tamperproof screws.
- E. Install end-of-line resistors at the field device location and not at the controller or panel location.

3.04 CABLE APPLICATION

- A. Comply with TIA 569-D, "Commercial Building Standard for Telecommunications Pathways and Spaces."
- B. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.
- C. TIA 232-F Cabling: Install at a maximum distance of 50 ft. between terminations.
- D. TIA 485-A Cabling: Install at a maximum distance of 4000 ft. between terminations.
- E. Card Readers and Keypads:
 - 1. Install number of conductor pairs recommended by manufacturer for the functions specified.
 - 2. Unless manufacturer recommends larger conductors, install No. 22 AWG wire if maximum distance from controller to the reader is 250 ft., and install No. 20 AWG wire if maximum distance is 500 ft.
 - 3. For greater distances, install "extender" or "repeater" modules recommended by manufacturer of the controller.
 - 4. Install minimum No. 18 AWG shielded cable to readers and keypads that draw 50 mA or more.
- F. Install minimum No. 16 AWG cable from controller to electrically powered locks. Do not exceed 250 ft. between terminations.
- G. Install minimum No. 18 AWG ac power wire from transformer to controller, with a maximum distance of 25 ft. between terminations.

3.05 GROUNDING

- A. Comply with IEEE 1100, "Recommended Practice for Power and Grounding Electronic Equipment."
- B. Ground cable shields, drain conductors, and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

- C. Bond shields and drain conductors to ground at only one point in each circuit.
- D. Signal Ground:
 - 1. Terminal: Locate in each equipment room and wiring closet; isolate from power system and equipment grounding.
 - 2. Bus: Mount on wall of main equipment room with standoff insulators.
 - 3. Backbone Cable: Extend from signal ground bus to signal ground terminal in each equipment room and wiring closet.

3.06 IDENTIFICATION

- A. In addition to requirements in this article, comply with applicable requirements in Section 27 0553 "Identification for Communications Systems" and with TIA 606-B.
- B. Using software specified in "Cable and Asset Management Software" Article, develop cable administration drawings for system identification, testing, and management. Use unique, alphanumeric designation for each cable, and label cable and jacks, connectors, and terminals to which it connects with the same designation. Use logical and systematic designations for facility's architectural arrangement.
- C. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
 - 1. All wiring conductors connected to terminal strips shall be individually numbered, and each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with the name and number of the particular device as shown.
 - 2. Each wire connected to building-mounted devices is not required to be numbered at the device if the color of the wire is consistent with the associated wire connected and numbered within the panel or cabinet.
- D. At completion, cable and asset management software shall reflect as-built conditions.

3.07 SYSTEM SOFTWARE AND HARDWARE

- A. Develop, install, and test software and hardware, and perform database tests for the complete and proper operation of systems involved. Assign software license to Owner.

3.08 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
 - 1. Test each circuit and component of each system. Tests shall include, but are not limited to, measurements of power-supply output under maximum load, signal loop resistance, and leakage to ground where applicable. System components with battery backup shall be operated on battery power for a period of not less than 10 percent of the calculated battery operating time. Provide special equipment and software if testing requires special or dedicated equipment.
 - 2. Operational Test: After installation of cables and connectors, demonstrate product capability and compliance with requirements. Test each signal path for end-to-end performance from each end of all pairs installed. Remove temporary connections when tests have been satisfactorily completed.
- C. Devices and circuits will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

3.09 STARTUP SERVICE

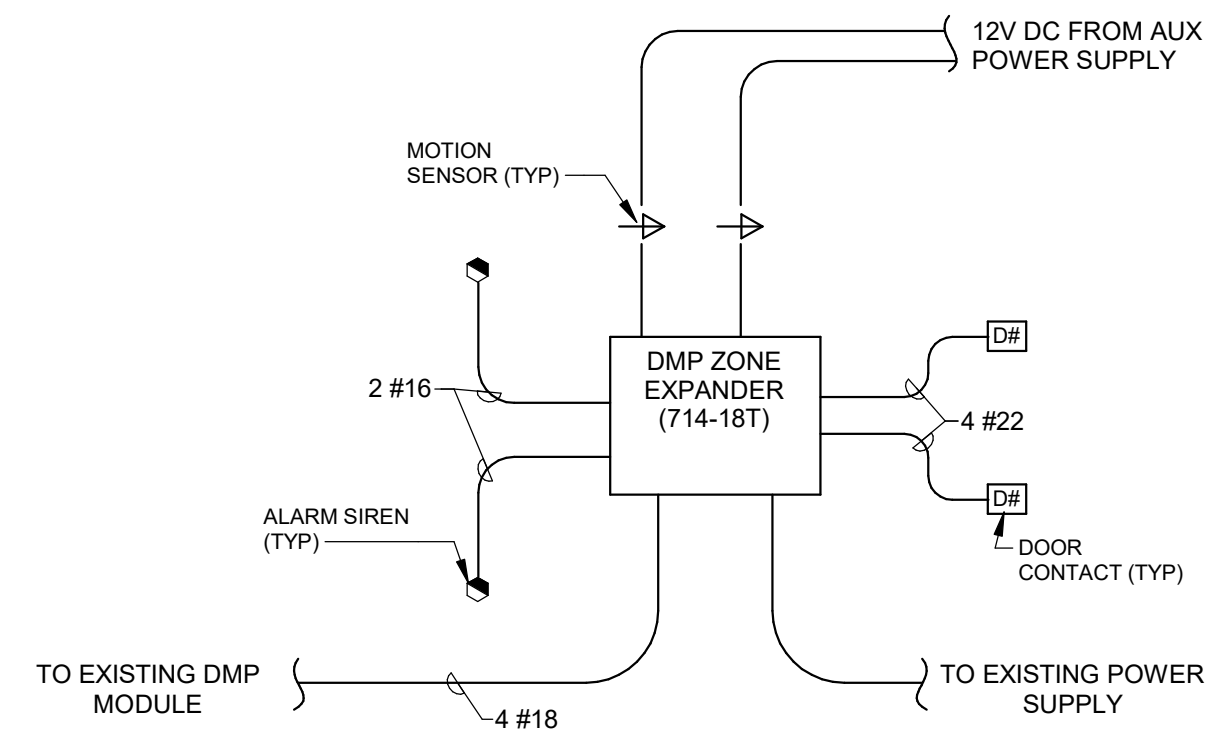
- A. Engage a factory-authorized service representative to supervise and assist with startup service.
 - 1. Complete installation and startup checks according to approved procedures that were developed in "Preparation" Article and with manufacturer's written instructions.

2. Enroll and prepare badges and access cards for Owner's operators, management, and security personnel.

3.10 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain security access system.
- B. Develop separate training modules for the following:
 1. Computer system administration personnel to manage and repair the databases and to update and maintain software.
 2. Operators who prepare and input credentials to man the control station and workstations and to enroll personnel.
 3. Security personnel.
 4. Hardware maintenance personnel.
 5. Corporate management.

END OF SECTION



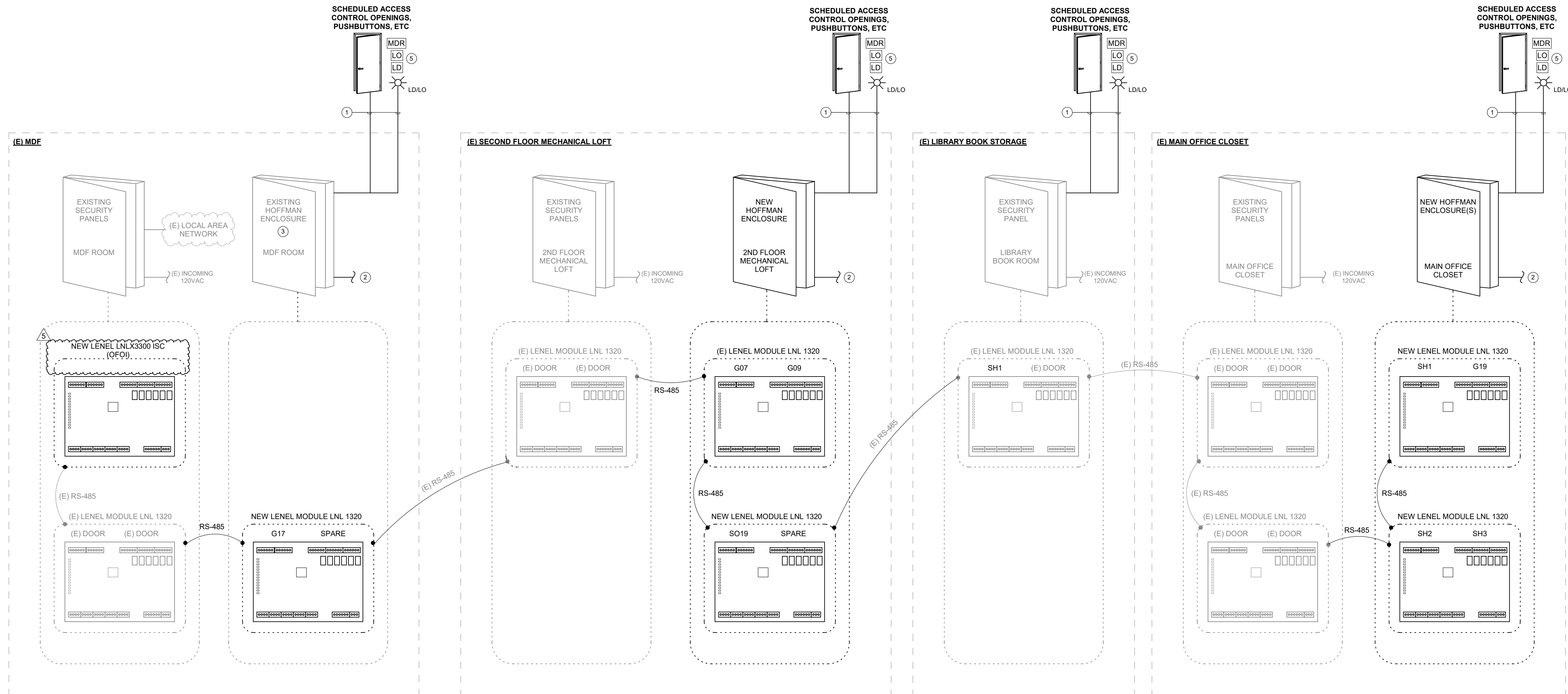
- GENERAL NOTES:**
- A. DMP INTRUSION DETECTION SYSTEM IS EXISTING. PROVIDE THE MAJOR SYSTEM COMPONENTS ILLUSTRATED ACCOMMODATE NEWLY SCHEDULED EQUIPMENT.
 - B. THE INTENT OF THE RISER DIAGRAMS ARE TO IDENTIFY MAJOR SYSTEM COMPONENTS. CONSULT MANUFACTURER RECOMMENDATIONS AND PROVIDE WIRING, COMPONENTS, ETC AS REQUIRED TO DELIVER A FULLY FUNCTIONAL SYSTEM.
 - C. REFER TO FLOOR PLANS FOR EQUIPMENT LOCATIONS.
 - D. PROGRAMMING IS BY THE BIDDING CONTRACTOR AT THE DIRECTION OF 4J SCHOOL DISTRICT.

NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT

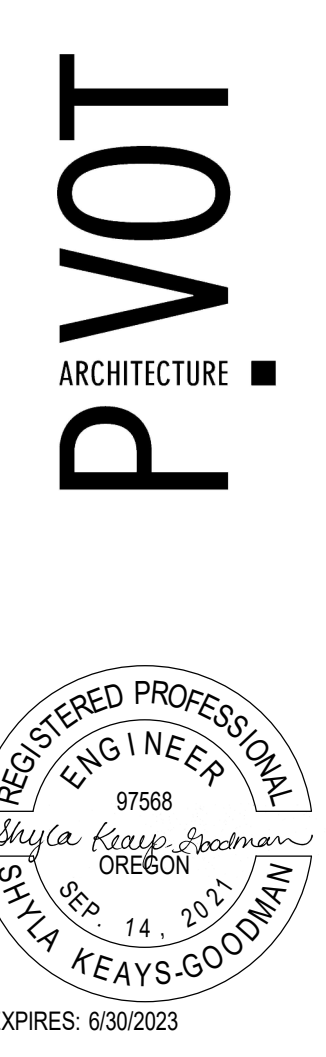
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 - C. REFER TO FLOOR PLANS FOR EQUIPMENT LOCATIONS.
 - D. PROGRAMMING IS BY THE BIDDING CONTRACTOR AT THE DIRECTION OF 4J SCHOOL DISTRICT.
 - E. COORDINATE AC POWER REQUIREMENTS WITH DIVISION 26 CONTRACTOR.
 - F. ABBREVIATIONS:
 (E) - EXISTING ITEM TO REMAIN
 (ER) - NEW LOCATION OF EXISTING ITEM
 (N) - NEW ITEM IN EXISTING LOCATION
 (D) - DEMOLISHED ITEM, PATCH AND/OR COVER
 (RN) - REPLACE EXISTING WITH NEW
 (RR) - EXISTING ITEM TO BE REMOVED AND RELOCATED

- KEYNOTES: (#)**
1. MULTI-CABLE, MULTI-CONDUCTOR COMPOSITE CABLE (TYP. FOR EACH CONTROLLER), REFER TO ACCESS CONTROL DETAILS AND SPECIFICATIONS FOR WIRING REQUIREMENTS.
 2. PROVIDE NEW WIRING FROM EXISTING POWER SUPPLY AND CONNECT.
 3. INSTALL NEW READER CARD IN EXISTING SPARE HOFFMAN ENCLOSURE.
 4. REINSTALL EXISTING ACCESS CONTROL INFRASTRUCTURE FROM REMOVED CABINETS. SPLICE AND EXTEND EXISTING CABLING. CONSOLIDATE SPLICED CABLING INTO ONE (1) PULL BOX. RETERMINATE WIRING AND PROGRAM TO MATCH EXISTING CONDITIONS.
 5. REFER TO SPECIFICATIONS FOR DEVICE REQUIREMENTS.
 6. NOT USED.
 7. NOT USED.

2 TYPICAL DMP EXPANDER DIAGRAM - SHELDON



1 LEVEL ACCESS CONTROL RISER - SHELDON



CONSTRUCTION DRAWING SET
4J SECURITY IMPROVEMENTS
 PROJECT #: 2207
 EUGENE SCHOOL DISTRICT 4J

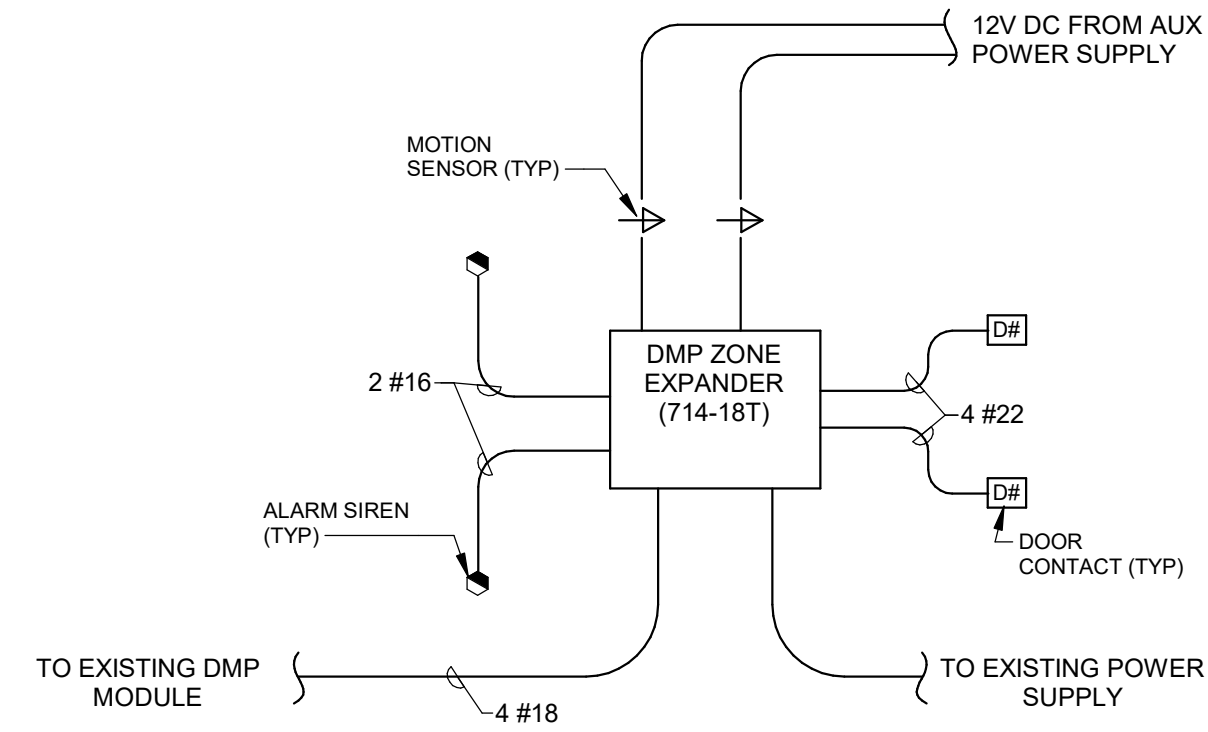
SHEET TITLE:
TECHNOLOGY RISER DIAGRAMS - SHELDON

REVISIONS:

#	DESCR.	DATE
5	ADD 5	04/14/23

ISSUE DATE: 03.15.23

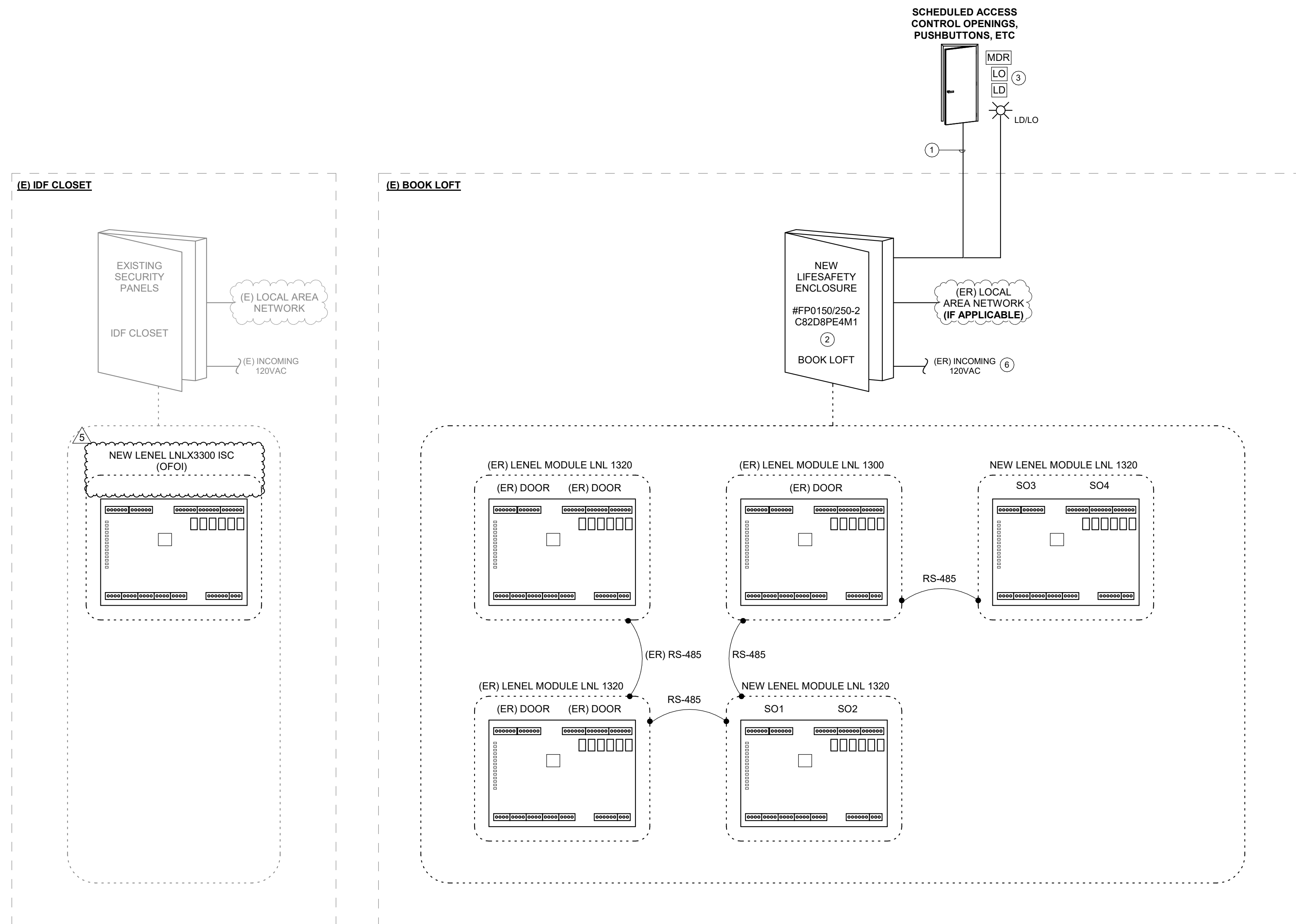
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 - C. REFER TO FLOOR PLANS FOR EQUIPMENT LOCATIONS.
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1 TYPICAL DMP EXPANDER DIAGRAM - S. EUGENE



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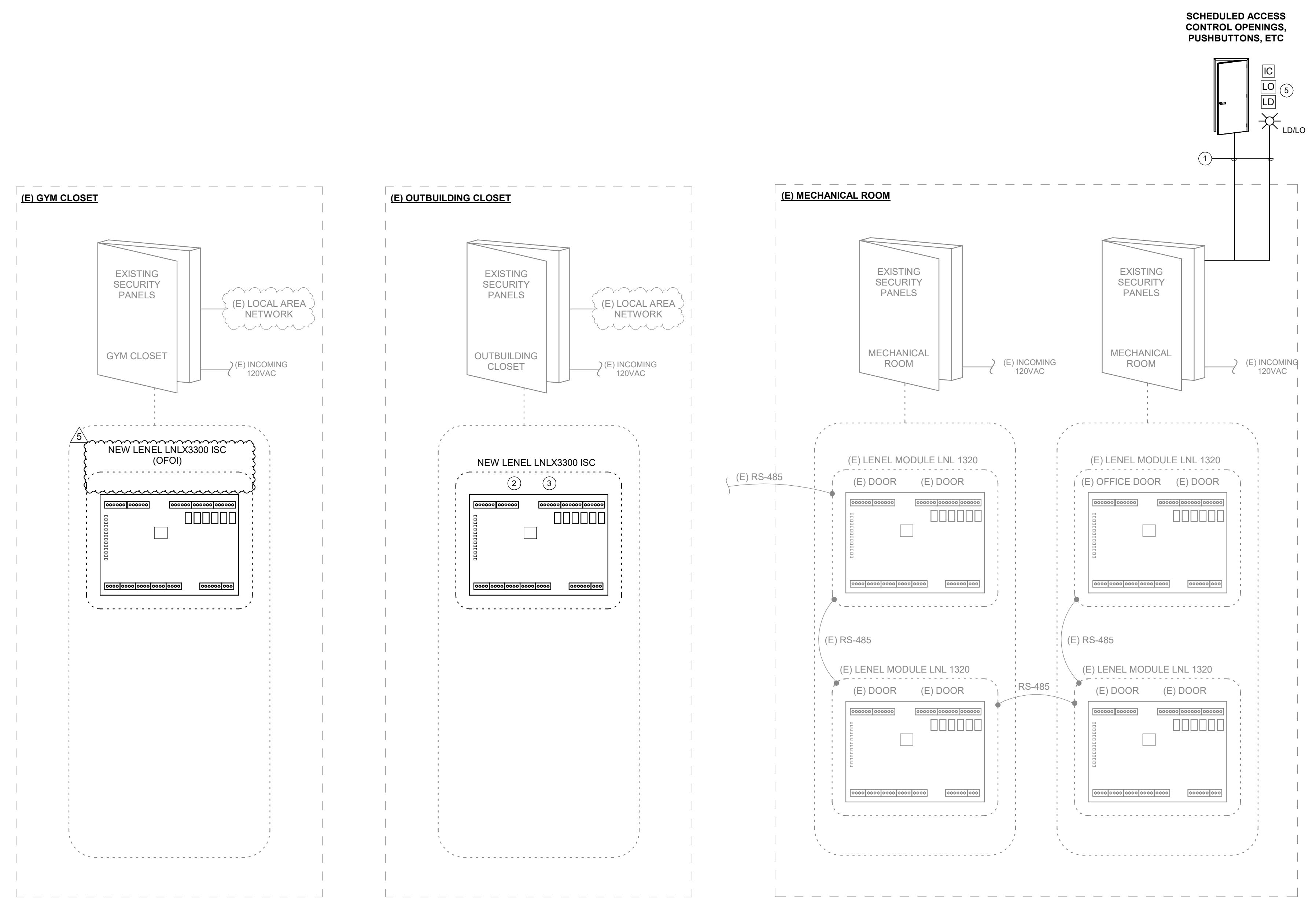
- KEYNOTES:**
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 - 3. REFER TO SPECIFICATIONS FOR DEVICE REQUIREMENTS.
 - 4. NOT USED.
 - 5. NOT USED.
 - 6. COORDINATE THE EXTENSION AND RECONNECTION OF EXISTING LOCAL 120V CIRCUIT WITH DIVISION 26 CONTRACTOR.

2 LEVEL ACCESS CONTROL RISER - S. EUGENE

REVISIONS:	#	DESCRP.	DATE
	5	ADD 5	04/14/23

REVISIONS:

#	DESCRP.	DATE
3	ADD 3	04/07/23
5	ADD 5	04/14/23



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