ADDENDUM NO. 2

August 8, 2024

Kalamazoo Public Schools – Winchell Elementary School Classroom Addition
2316 Winchell Avenue
Kalamazoo, MI 49008

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications and the Drawings dated May 17, 2024, by TowerPinkster. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1, and TowerPinkster Addendum No. 2 dated August 7, 2024, consisting of pages 1 through 50.

A. BID CATEGORY NO. 05 – GENERAL TRADES

Add the following Clarification:

1. Bid Category No. 05 - General Trades shall coordinate with Bid Category No. 07 - Mechanical to remove, salvage, and reinstall portions of the Corridor ceiling grid and tile. Allow for 100 square feet.

B. BID CATEGORY NO. 08 – Electrical

Add the following Clarification:

1. Bid Category No. 08 - Electrical must possess and submit proper certifications for all low-voltage and data cabling installation.

C. Refer to the attached Request For Information summary, Pre-Bid RFI No. 01 through 9 are included.

TowerPinkster
Architecture · Engineering · Interiors

ADDENDUM NO. 2

DATE OF ISSUANCE:	**August 7, 2024**
PROJECT:	**KPS – Winchell Elementary Classroom Addition**
OWNER:	**Kalamazoo Public Schools**
ARCHITECT'S PROJECT NO.:	**23607**
ORIGINAL BID ISSUE DATE:	**May 17, 2024**

SCOPE OF WORK

This Addendum includes changes to, or clarifications of, the original Bidding Documents and any previously issued addenda, and shall be included in the Bid. All of these Addendum items form a part of the Contract Documents. The Bidder shall acknowledge receipt of this Addendum in the appropriate space provided on the Bid Form. Failure to do so may result in disqualification of the Bid.

DOCUMENTS INCLUDED IN THIS ADDENDUM

This Addendum includes **4** pages of text and the following documents:

- Bidding Documents: **0**
- Contract Conditions: **0**
- Specification Sections: **5**
- Drawings: **8**
    - TD 101C, T 101, T 101C, T 402, T 441, T 442
    - A 101C, A 501

CHANGES TO PREVIOUSLY ISSUED ADDENDA

None.

CHANGES TO BIDDING REQUIREMENTS

None.

CHANGES TO CONTRACT CONDITIONS

None.

CHANGES TO SPECIFICATIONS

ADD-2 Item No. S-1 – Removed Spec Section 28 3113 EMERGENCY SERVICES COMMUNICATIONS SYSTEMS

An emergency services communications system will NOT be part of this project.

ADD-2 Item No. S-2 – Added Spec Section 27 0510 – TECHNOLOGY RESPONSIBILITY MATRIX

Refer to: SECTION 27 0510 – TECHNOLOGY RESPONSIBILITY MATRIX

ADD-2 Item No. S-3 – Added Spec Section 28 1300 – ACCESS CONTROL

Refer to: SECTION 28 1300 – ACCESS CONTROL

ADD-2 Item No. S-4 – Added Spec Section 28 1500 – ACCESS CONTROL HARDWARE

Refer to: SECTION 28 1300 – ACCESS CONTROL HARDWARE

ADD-2 Item No. S-5– Revised Spec Section 32 1800 – ATHLETIC AND RECREATIONAL SURFACING

Refer to updated: SECTION 32 1800 – Basketball Court Striping Specification. The new basketball court will not receive an athletic coating. Provie striping only as shown on the drawings and as defined in the updated specification.

ADD-2 Item No. S-6 – Removed Spec Section 32 3900 MISCELLANEOUS SITE SPECIALTIES

A new bike rack will NOT be part of this project.

ADD-2 Item No. S-7 – Revised Spec Section 05 1200 – STRUCTURAL STEEL FRAMING

Specification requires steel fabricator to be AISC certified. We can waive the AISC requirement, but the fabricator needs to be aware of and follow additional building code requirements when not certified in order to meet the special inspections requirements. Specifically, if non-certified, they need to meet the following from the Michigan Building Code:

"1705.2.1 Structural steel. Special inspections and nondestructive testing of structural steel elements in buildings, structures and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 360."

Basically, an AISC Certified Fabricator is pre-qualified as having met all the requirements of AISC 360, and therefore meets the Building Code Requirements without requiring additional special inspections in the fabricator's shop. If a non-certified fabricator desires to bid this project, the following must be provided, at a minimum, prior to submission of the bid:

- Fabricator's written quality control manual that includes, at a minimum:

    - Material Control Procedures
    - Inspection Procedures
    - Nonconformance Procedures
- Fabricator's Quality Control Inspector qualifications

Further, the Owner should be notified of the Contractor's desire to use a non-Certified fabricator with written approval obtained waiving these requirements.

ADD-2 Item No. S-8 – Reissued Spec 08 7100 Door Hardware

Reissued specification section 08 7100 Door hardware. Disregard the previously issued specification section.

CHANGES TO DRAWINGS

ADD-2 Item No. D-1 – Playground Equipment and Play Mulch by Owner

Refer to Sheet[s]: L 101 (not reissued)

- Playground Equipment and Play Mulch as shown shall be by the Owner.

ADD-2 Item No. D-2 – Revised Demolition Keyed Notes

Refer to Sheet[s]: TD 101C (Reissued)

- Revised Demolition Keyed Notes. Please refer to keyed notes 1 – 10.

ADD-2 Item No. D-3 – Revised Construction Keyed Notes

Refer to Sheet[s]: T 101, T 101C (Reissued)

- Revised Construction Keyed Notes. Please refer to keyed notes 1 – 11.

ADD-2 Item No. D-4 – Edit Teachers Station Rough-In Detail

Refer to Sheet[s]: T 402 (Reissued)

- Added upper deep 4-SQ. box with 2-gang opening for future AV System. Use FSR Mud Ring MUD-2G at 40".
- Changed lower 2-gang opening to 3-gang opening. Use FSR Mud Ring MUD-3G.

- Lower 3-Gang ALD moved to center opening. First gang now consists of (3) Data Jacks and (1) Blank Insert.

ADD-2 Item No. D-5 – Updated Door Schedule

Refer to Reissued Sheet[s]: A101C and A501 (Reissued)

- Reissued drawing sheet A 501 with added door hardware sets to the door schedule.
- Reissued drawing sheet A 101C with revised exterior door number out of classroom C7

ADD-2 Item No. D-6 – Updated Scope Notes for Classroom C3

Refer to Reissued Sheet[s]: A 101C (Reissued)

Touch up sections of wall with prime and paint for extend of walls indicated from floor to above ceiling.

ADD-2 Item No. D-7 – Add Card Reader at door E1, East Entrance

Refer to Sheet[s]: T 101C, T 441, T 442 (Reissued)

Added Card Reader and Detail Sheets for Card Reader. Refer to sheets T 441, T 442.

END OF ADDENDUM.

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Hollow Metal Doors and Frames”.
2. Division 08 Section “Flush Wood Doors”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedure.

H. Post-installation Conference: After installation of door hardware, conduct a project specific training meeting to examine the installing contractors' personnel installation and adjustment of their respective products. Post-installation conference to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. This meeting is mandatory.

I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Ten years for mortise locks and latches.
2. Five years for exit hardware.
3. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

    a. Two Hinges: For doors with heights up to 60 inches.
    b. Three Hinges: For doors with heights 61 to 90 inches.
    c. Four Hinges: For doors with heights 91 to 120 inches.
    d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

    a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
    b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

    a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Manufacturers:

    a. Hager Companies (HA) - CB Series.
    b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - TA Series.

2.3 POWER TRANSFER DEVICES

A. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Manufacturers:

a. Hager Companies (HA) - Quick Connect.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) – QC-C Series.

2.4 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

2. Manufacturers:

a. Ives (IV).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

1. Manufacturers:

a. Stanley Best (BE).
b. Marshall Best Systems (MB)

B. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Match Facility Standard.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) – ML2000 Series.
b. Sargent Manufacturing (SA) – 8200 Series.
c. Schlage (SC) – L9000 Series.
d. Stanley Best (BE) – 40H Series.

2.7 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.8 ELECTROMAGNETIC LOCKING DEVICES

A. Surface Electromagnetic Locks (Heavy Duty): Electromagnetic locks to be surface mounted type conforming to ANSI A156.23, Grade 2 with minimum holding force strength of 1,200 pounds. Locks to be capable of accepting between 12 to 24 volts direct current and be UL listed for use on fire rated door assemblies. Electromagnetic coils are to consume no more than 1.5W during normal operation. Locks are to have an integrated door position switch, tamper switch, and lock bond sensor. Locks are to have integrated motion sensor and/or security camera as indicated in the hardware sets. Locks to be capable of detecting door prop conditions and entering low power mode. Provide mounting accessories as needed to suit opening conditions. Power supply to be by the same manufacturer as the lock with combined products having a lifetime replacement warranty.

1. Manufacturers:

a. Securitron (SU) – M680E Series.

2.9 ELECTRIC STRIKES

A. Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Provide latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike where specified.

1. Manufacturers:

a. HES (HS).

B. Surface Mounted Rim Electric Strikes: Surface mounted rim exit device electric strikes conforming to ANSI/BHMA A156.31, Grade 1, and UL Listed for both Burglary Resistance and for use on fire rated door assemblies. Construction includes internally mounted solenoid with two heavy-duty, stainless steel locking mechanisms operating independently to provide tamper resistance. Strikes tested for a minimum of 500,000 operating cycles. Provide strikes with 12 or 24 VDC capability supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike. Strike requires no cutting to the jamb prior to installation.

1. Manufacturers:

a. HES (HS) - 9500/9600 Series.

C. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.10 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Flush End Caps: Provide flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.

6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.

9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

10. Rail Sizing: Provide exit device rails factory sized for proper door width application.

11. Through Bolt Installation: All exit devices to utilize thru bolts for installation.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Manufacturers:

    a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
    b. Sargent Manufacturing (SA) - 80 Series.
    c. Von Duprin (VD) - 35A/98 XP Series.
    d. **NOTE: All exit devices to use thru-bolts.**

C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.

2. Provide stabilizers and mounting brackets as required.

3. Provide electrical quick connection wiring options as specified in the hardware sets.

4. Manufacturers:

a. Corbin Russwin Hardware (RU) - 700/900 Series.
b. Sargent Manufacturing (SA) - 980S Series.
c. Von Duprin (VD) - 9954 Series.

2.11 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Manufacturers:

a. LCN Closers (LC) – 4040XP Series.
b. Norton Door Controls (NO) - 7500 Series.
c. **NOTE: Install closers on Wood Doors with thru-bolts. Do not thru-bolt exterior aluminum doors.**

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.

4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

6. Manufacturers:

    a. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

2.13 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

    a. Ives (IV).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

a. Glynn Johnson (GJ).
b. Rixson Door Controls (RF).
c. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
d. Sargent Manufacturing (SA).

2.14 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. National Guard Products (NG).
2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
3. Reese Enterprises, Inc. (RE).

2.15 ELECTRONIC ACCESSORIES

A. Power Supplies: Provide Nationally Recognized Testing Laboratory Listed 12VDC or 24VDC (field selectable) filtered and regulated power supplies. Include battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Manufacturers:

a. Securitron (SU) - BPS Series.

2.16 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.17 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

C. Manufacturer's Abbreviations:

1. MK - McKinney
2. RU - Corbin Russwin
3. PE - Pemko
4. HS - HES
5. RO - Rockwood
6. RF - Rixson
7. NO - Norton

Hardware Sets

Set: 1.0

Doors: E1

2	Continuous Hinge	CFM-SLF-HD1		PE
1	Fixed Mullion	Integral to Aluminum Framing System		OT
1	Exit Device (exit only)	ED5200 EO M54 M110	630	RU
1	Exit Device (nightlatch)	ED5200 K157ET x LC M54 M110	630	RU
1	Rim Cylinder Housing	12E-72 Less Core	626	BE
1	Core	Provided by KPS	626	BE
1	Electric Strike	9600	630	HS
1	SMART Pac Bridge Rectifier	2005M3		HS
1	ElectroLynx Adaptor	2004M		HS
1	Pull	RM201 Mtg-Type 12XHD	US32D-316	RO
2	Conc Overhead Stop	6-X36	630	RF
2	Surface Closer	J7500 SN-134 x mounting plate, if req'd	689	NO

1	Threshold	1715AK MSES25SS		PE	
1	Weatherstrip	Integral to door/frame assembly		OT	
2	Sweep	29326CNB TKSP		PE	
2	Door Position Switch	Provided by Security Contractor	BLK	OT	⚡
1	ElectroLynx Harness	QC-C1500P (electric strike to j-box)	MK	⚡	
1	Power Supply	Provided by Security Contractor		OT	⚡
1	Card Reader	Reuse Existing Card Reader		OT	⚡

Notes:

Doors normally closed and locked.
Presentation of valid credential at card reader unlocks electric strike allowing ingress.
Free egress at all times.
Fail-secure.

Set: 2.0

Doors: C3A, C7C, C8C

1	Continuous Hinge	CFM-SLF-HD1		PE	
1	Rim Exit Device, Exit Only	ED5200S EO M110 M54 M51	630	RU	
1	Conc Overhead Stop	6-X36	630	RF	
1	Surface Closer	J7500 SN x mounting plate, if req'd	689	NO	
1	Threshold	1715AK MSES25SS		PE	
1	Weatherstrip	Integral to door/frame assembly		OT	
1	Sweep	29326CNB TKSP		PE	
1	Door Position Switch	Provided by Security Contractor	BLK	OT	⚡

Set: 3.0

Doors: C7A, C8A

3	Hinge (heavy weight)	T4A3786 (NRP)	US26D	MK
1	Exit Device (classroom sec)	PED5242A N942PT M51 M47	630	RU
1	Rim Cylinder Housing	12E-72 Less Core (outside)	626	BE
1	Mortise Cylinder	1050-112-A07-7 x CL7SD (inside)	626	SA
2	Core	Provided by KPS	626	BE
1	Surface Closer	PR7500 SN	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406	US32D	RO

Notes: Key outside retracts latch bolt. Key inside locks or unlocks outside lever trim.
Indicator on inside shows status of outside lever.
Free egress always permitted.

Set: 4.0

Doors: C7B, C8B

3	Hinge, Full Mortise	TA2714	US26D	MK

1	Privacy Lock	ML2060 NSA M34 V21	626	RU
1	Surface Closer	7500 SN pull side mount	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
1	Gasketing	S88BL		PE
1	Coat Hook	796	US26D	RO

END OF SECTION 087100

SECTION 27 0510 – TECHNOLOGY RESPONSIBILITY MATRIX

PART 1 - GENERAL

1.1 Purpose

A. The intention of this matrix is to identify who is managing the construction of these systems. All systems will be designed by TowerPinkster.

STRUCTURED CABLING SYSTEMS	KPS	TP	SKILLMAN
Cable Tray (corridors)	☐	☐	☒
Cable Tray Systems (inside of TR)	☐	☐	☒
Network Racks/Cabinets	☐	☐	☒
Cable Management	☐	☐	☒
Patch Panels	☐	☐	☒
UPS & PDU	☐	☐	☒
TR Bonding/Grounding	☐	☐	☒
Cable Tray, Raceway, Supports	☐	☐	☒
Conduits	☐	☐	☒
Category Cabling (CAT6)	☐	☐	☒
Fiber Optic Backbone Cabling	☐	☐	☒
Copper Backbone Cabling	☐	☐	☒

WIDE AREA NETWORK	KPS	TP	SKILLMAN
Site Fiber Optic Cabling	☐	☐	☒
Telecom provider coordination (if required)	☐	☐	☒
Site Pathways (handholes, conduits, etc.)	☐	☐	☒

CLOCKS & PAGING SYSTEMS	KPS	TP	SKILLMAN
Clocks (digital, analog, cages, etc.)	☐	☐	☒
Clock Transmitter	☐	☐	☒
Clock Pathways (conduits, boxes, etc.)	☐	☐	☒
Paging Speakers	☐	☐	☒
Paging Cabling	☐	☐	☒
Paging Pathways (conduits, boxes, etc.)	☐	☐	☒
Paging Headend	☐	☐	☒
Paging Call Buttons	☐	☐	☒

AV SYSTEMS	KPS	TP	SKILLMAN
Classroom/Cafe/Gym AV Systems (projectors, speakers, microphones, etc.)	☐	☒	☐
Classroom/Cafe/Gym AV Cabling	☐	☒	☐
Classroom/Cafe/Gym AV Pathways	☐	☐	☒
Conference Room AV systems	☐	☒	☐
Conference Room AV Cabling	☐	☒	☐
Conference Room AV Pathways (conduits, boxes, etc.)	☐	☐	☒
Digital Signage (display, bracket, DS player, etc.)	☐	☒	☐
Digital Signage Cabling	☐	☒	☐
Digital Signage Pathways (conduits, boxes, etc.)	☐	☐	☒

SECURITY SYSTEMS	KPS	TP	SKILLMAN
Security Cameras	☐	☐	☒
Security Camera Cabling	☐	☐	☒
Security Camera Pathways (conduits, boxes, etc.)	☐	☐	☒
Access Control Systems (card readers, door strikes, contacts, REX, Power Supplies, software)	☐	☒	☐
Access Control Cabling	☐	☐	☒
Access Control Pathways (conduits, boxes, etc.)	☐	☐	☒
Security Intercoms	☐	☒	☐
Security Intercom Cabling	☐	☐	☒
Security Intercom Pathways (conduits, boxes, etc.)	☐	☐	☒

NETWORK DEVICES	KPS	TP	SKILLMAN
Wireless Access Points (device)	☐	☐	☒
Wireless Access Points Cabling	☐	☐	☒
Wireless Access Point Pathways (conduit, boxes, etc.)	☐	☐	☒
End User Devices (laptops, phones, desktops, monitors, etc.)	☒	☐	☐

END OF SECTION 27 0510

SECTION 28 1300 - ACCESS CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section. Failure to consult these documents shall not relieve the Contractor of the requirements therein.

1.2 SUMMARY

A. This Section includes the following:

1. Security Access Devices.
2. Access Control Panel.

1.3 RELATED SECTIONS

A. Section 08 7100 –Door Hardware
B. Division 26 Section "Electrical" for connections to electrical power system and for low-voltage wiring work.
C. Division 27 Section "Communications" for connections to the LAN.

1.4 REFERENCES

A. ANSI A117.1 (1998) - Accessible and Usable Buildings and Facilities.
B. IBC 2009 - International Building Code.
C. NFPA 70 (2008) - National Electrical Code.
D. NFPA 80 - Fire Doors and Windows.
E. NFPA 101- Life Safety Code.
F. UL 294 - Access Control Systems.
G. UL 1076 - Proprietary Burglar Alarm Units and Systems.
H. Local applicable codes.

1.5 SYSTEM DESCRIPTION

A. Security Access System.

1. Selected Exterior Doors: Control access into Building.
2. Selected Building Areas: Control access into selected areas indicated.
3. System shall be compatible with existing Galaxy System, Software version 9.X or higher

1.6 SUBMITTALS

A. Shop Drawings: Provide system wiring diagram showing each device and wiring connection required.

B. Product Data: Provide electrical characteristics and connection requirements.

C. Test Reports: Indicate satisfactory completion of required tests and inspections.

D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

E. Project Record Documents: Record actual locations of access authorization equipment.

F. Operation Data: Operating instructions.

G. Maintenance Data: Maintenance and repair procedures.

1.7 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum twenty years documented experience and with service facilities within 100 miles of Project.

C. Installer Qualifications: Company specializing in installing the products specified in this section with minimum Installer Qualifications: Systems Integrators, verifiably factory trained and certified by the primary product manufacturers, with documented experience installing complete integrated access control systems similar in material, design, and scope to that indicated for this Project and whose work has resulted in construction with a proven record of successful in-service performance. Qualifications include, but are not necessarily limited, to the following:

1. References: Provide a list of references for similar projects including contact name, phone number, name and type of project.
2. Professional Staffing: Firms to have a dedicated access control systems integration department with full time, experienced professionals on staff experienced in providing on site consulting services for both electrified door hardware and integrated access control systems installations.
3. Factory Training: Installation and service technicians are to be competent factory trained and certified personnel capable of maintaining the system.
4. Service Center: Firms to have a service center capable of providing training, in-stock parts, and emergency maintenance and repairs at the Project site with 24-hour/7-days a week maximum response time.

D. Supplier Qualifications: Supplier/Dealers, verifiably authorized and in good standing with the primary product manufacturers, with experience supplying integrated access control systems similar in material, design, and scope to that indicated for this Project and whose work has resulted in construction with a proven record of successful in-service performance.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article will not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and are in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of the installed access control system hardware and software that fails in materials or workmanship, including all related parts and labor, within specified warranty period after final testing and acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Testing Agency Qualifications: An independent testing agency, with the experience and capability to conduct the testing indicated, that is a member company of the National Burglar & Fire Alarm Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7[**, and that is acceptable to Owner's insurance underwriter**].

E. Testing Agency's Field Supervisor: Person currently certified as an advanced alarm technician by the National Burglar & Fire Alarm Association to supervise on-site testing specified in Part 3.

1.9 MAINTENANCE SERVICE

A. Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (12) months full maintenance by skilled employees of the Systems Integrator. Include repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies as used in the manufacture and installation of original products.

B. EXTRA MATERIALS

C. Provide thirty (30) key cards.

PART 2 - PRODUCTS

2.1 OVERVIEW

A. The devices described herein are intended to provide a reference for the Card Access/Security System and are to be provided as described in the Contract Documents.

B. Certain devices described may not be applicable to all systems. All devices required to complete the installation may not be described but shall be provided as if specifically called for within the Specification. It is the responsibility of the Contractor to provide a complete working system.

C. All system components shall be approved for the function they will perform.

D. The system shall be of an open architecture design and shall support industry standard databases such as Microsoft SQL Server 2000/2005, MSDE or SQL Server 2005 Express.

E. A system server for enterprise wide database services, system programming, system monitoring, administrative services, report and proximity card generation.

F. A workstation computer shall provide interfacing and control of the local, site specific, Access/Security System.

G. The System shall be of a distributed database design, using intelligent microprocessor panels, to make smart decisions at the door.

H. The system shall be capable of utilizing a true client server network configured to support the system database service, all panel services and user interfaces optimizing the users' options for system programming, event monitoring and record keeping.

I. The database service shall be ODBC compliant allowing the system to access an existing compatible ODBC compliant database as the system data source. A single system database shall maintain both credential-holder's records as well as access system information and programming parameters.

2.2 MANUFACTURERS

A. Manufacturers subject to compliance with requirements, provide products by the manufacturers specified.

1. Access Control System-Galaxy Control Systems
2. Card Readers – Farpointe Data or approved equivalent.
3. Proximity Cards – Cards will be furnished by Owner and will be 26 bit, HID compatible.
4. DoorKing, Inc.
5. Detection Systems, Inc.
6. Schlage Lock.
7. Simplex, Inc.
8. Substitutions: Refer to Division 01 Section "Product Requirements".

2.3 ACCESS CONTROL PANEL

A. The access control panel shall be an intelligent, modular controller designed to integrate various event management applications on one controller. The system shall be the System Galaxy 600 Series.

B. COMPONENTS

1. Primary Controller: The Primary Controller is the controller responsible for up/downstream communications with the PC/Network. The Primary Controller consists of three major subsystems, software services, hardware and expansion interfaces.
   a. Software Services: The software services are a set of common functions and applications that shall be installed on every 600 Series Controller to perform system configuration, generic system event handling and communications between the controller and a host or other controllers.
   b. Hardware

1) Ethernet Port: The 600 Series Controller shall support 10BaseT Ethernet Communication. The interface to the Ethernet services shall be through a standard RJ-45 jack connector native to the controller. Provide as many as required for full system integration.
2) Inputs/outputs: The 600 Series controller shall have three (3) on-board inputs. The inputs are reserved for tamper, power fail, and low battery.
3) Serviceable Hot-Swap Modules: The Controller shall allow for "Hot-Swap" serviceability. This allows for communications and door modules to be interchanged without a controller power-down.
4) Power Requirements: Each 600 Series Control Module shall accept a regulated input voltage of 11.5VDC to 13.8VDC and generate appropriate voltage levels for on-board use as required. The input supply voltage shall be available to be bussed directly to the reader bus connectors to supply operating voltages for field readers. A jumper shall be provided for the ACP modules supporting direct Wiegand support to supply either 12VDC or 5 VDC to the external read heads.
5) Indicators: There shall be LEDs indicating the status of the received and transmitted data for the onboard communications ports, with active data turning on the LED. These LEDs shall be hardware controlled.
6) Ports: There shall be multiple ports provided on-board for external read heads, input/output boards. The number of actual ports varies according to the controller configuration.

c. Expansion Interfaces
1) Inputs: 8 Supervised Class A inputs shall be provided on each Digital I/O board. These inputs shall report secure for user selectable ohms and alarm for open or short. Resistors marked for easy identification shall be located near each input connector to be clipped out by the end user when installing inputs.
Outputs: 4 Class C relay outputs shall be provided on each Digital I/O board these outputs shall have contacts for Normally Open or Normally Closed states
a) Each 600 Controller shall support up to five (5) Digital I/O board, adding up to forty (40) supervised inputs and twenty (20) Class C relays.

C. System Enclosure: Sheet metal, of the appropriate gauge for the cabinet size per UL 294, shall be utilized. The cabinet shall be Black in color with a matte finish. The ACP's shall be housed in a locking 18 gauge metal cabinet, suitable for wall mounting. All cabinet locks shall be keyed alike. The cabinet shall be suitably sized to allow installation of the controller and all expansion modules and associated field wiring. The cabinet door shall include illuminated diagnostic indicators, which shall indicate the status of the panel. A single tamper switch shall be incorporated into the door. There shall be at least 4 mounting holes and 10 knockouts on the cabinet. Panel shall be provided with 120 volt power supply along with battery backup and battery charger.

2.4 CARD READERS

A. All readers shall be compatible with Owners 26 bit, HID cards.

B. Readers shall be long range proximity, minimum 8" range, type technology system that complies with UL 294 standards and is certified as complying by Underwriters' Laboratories.

C. Readers shall be single piece indoor/outdoor wall switch proximity reader providing a Wiegand 26 Bit output. Shall mount in a door entry panel electrical box and shall be powered directly from the panel. The

reader shall be sealed in a rugged, weatherized enclosure designed to withstand harsh environments as well as provide a high degree of vandal resistance when installed outdoors.

D. Manufacture

1. Wall mount – Farpointe Data Model P-500
2. Mullion Mount –Farpointe Data Model P-300
3. Vehicle Entrances – HID Maxiprox

E. POWER SUPPLIES

1. Power supplies for mortise and/or strike lock power shall be suitable to provide 24vdc, 4 amp power to Altronix AL-400. Provide one for every eight doors.

F. Key Pad Units.

G. Electric Strikes.

H. Electric Locks.

I. Motion Dectectors.

J. Manual Stations.

K. System Cable.

PART 3 - EXECUTION

3.1 PRE-INSTALL MEETING

A. Prior to commencing installation, the trades shall convene for a coordination meeting including but not limited to the following parties:

1. Architect
2. Electrical Engineer or Systems Designer
3. Construction Manager
4. Frame and Door Installer
5. Door Hardware Installer
6. Electrical and Fire Alarm contractor
7. Low voltage or security systems contractor

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use 16 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in conduit.

C. Make conduit and wiring connections to door hardware devices furnished and installed under Division 08 Section “Door Hardware.”

3.3 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01 Section “Quality Control.”

3.4 MANUFACTURER’S FIELD SERVICES

A. Include services of technician to supervise installation, adjustments, final connections, system testing, and to train Owner personnel.

3.5 DEMONSTRATION

A. Demonstrate normal and abnormal modes of operation, and required response to each.

B. Provide 4 hours of instruction each for two persons.

1. Conduct instruction at project site with manufacturer’s representative.
2. Include travel and living expenses for Owner personnel.

END OF SECTION 28 1300

SECTION 28 1500 - ACCESS CONTROL HARDWARE DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Card readers, credential cards, and keypads
2. Access control peripheral devices
3. Electrified locking devices and accessories
4. Lockdown controls and signals
5. Cables
6. Transformers

B. Related Requirements:

1. Section 08 7100 “Door Hardware” for information on power supply specifications and door sequence of operations.
2. Section 28 1300 "Access Control System Software and Database Management" for control and monitoring applications, workstations, and interfaces.
3. Section 28 3100 “Fire Detection and Alarm” for integration with fire system.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Device layout information, including the following:
   a. Lockdown devices, including signal lights and initiation controls.
      1) Wiring diagrams indicating their connection to the access control system.
   b. Initial wiring diagrams and connections between all devices requiring relays to/from the access control system, including:
      1) Access control intercom
      2) Access control release buttons and toggle switches
      3) Lockdown systems
      4) Dialing and signaling requirements on lockdown events

2. Initial access control programming schedules for unlock/lock times.
3. Diagrams for cable management system.
4. 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.

5. Wall plate options: provide cutsheets of all wall plate types for signal controls.
6. Wiring Diagrams. For power, signal, and control wiring. Show typical wiring schematics including the following:
   a. Workstation outlets, jacks, and jack assemblies.
   b. Patch cords.
   c. Patch panels.
7. Cable Administration Drawings: As specified in "Identification" Article.
8. Battery and charger calculations for central station, workstations, and controllers.

C. Product Schedules.

D. Samples: For workstation outlets, jacks, jack assemblies, and faceplates. For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 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. Fuses of all kinds, power and electronic, equal to 10 percent of amount installed for each size used, but no fewer than three units.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

1. Cable installer must have on staff an RCDD certified by Building Industry Consulting Service International.

B. Source Limitations: Obtain central station, workstations, controllers, Identifier readers, and all software through one source from single manufacturer.

1.8 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.
2. Indoor, Controlled Environment: NEMA 250, Type 1 enclosure. System components, except the central-station control unit, installed in temperature-controlled indoor environments shall be rated for continuous operation in ambient conditions of 36 to 122 deg F dry bulb and 20 to 90 percent relative humidity, noncondensing.
3. Indoor, Uncontrolled Environment: NEMA 250, Type 4 enclosures. System components installed in non-temperature-controlled indoor environments shall be rated for continuous operation in ambient conditions of 0 to 122 deg F dry bulb and 20 to 90 percent relative humidity, noncondensing.
4. Outdoor Environment: NEMA 250, NEMA 250, Type 4X enclosures. System components installed in locations exposed to weather shall be rated for continuous operation in ambient conditions of minus 30 to plus 122 deg F dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation where exposed to rain as specified in NEMA 250, winds up to 85 mph and snow cover up to 36 inches thick.
5. Hazardous Environment: System components located in areas where fire or explosion hazards may exist because of flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers shall be rated, listed, and installed according to NFPA 70.
6. Corrosive Environment: For system components subjected to corrosive fumes, vapors, and wind-driven salt spray in coastal zones, provide NEMA 250, Type 4X enclosures.

PART 2 - PRODUCTS

2.1 OPERATION

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

2.2 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."

C. Comply with SIA DC-01 and SIA DC-03 and SIA DC-07.

2.3 CARD READERS, CREDENTIAL CARDS, AND KEYPADS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. HID Global
   a. Card Readers
      1) HID multiClass RP15
      2) HID multiclass RP40
      3) Equivalent substitutions are subject to Owner review prior to contract award. Equivalent substitutions must meet the following criteria:
         a) Weigand or OSDP protocol options
         b) Multi-technology read capability (125kHz and 13.56MHz minimum)

c) Offer low-profile (mullion mounted) options

b. Credentials

1) Coordinate with owner prior to sign off to obtain access cards for programming into system.

B. Card Readers:

1. Card-Reader Power: Powered from its associated controller, including its standby power source, and shall not dissipate more than 5 W.
2. 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.
3. Enclosure: Suitable for surface, semi-flush, pedestal, or weatherproof mounting. Mounting types shall additionally be suitable for installation in the following locations:
   a. Indoors, controlled environment.
   b. Indoors, uncontrolled environment.
   c. Outdoors, with built-in heaters or other cold-weather equipment to extend the operating temperature range as needed for operation at the site.
4. Display: Digital visual indicator shall provide visible and audible status indications and user prompts. Indicate power on or off, whether user passage requests have been accepted or rejected, and whether the door is locked or unlocked.
5. Stripe Swipe Readers: Bidirectional, reading cards swiped in both directions, powered by the controller. Reader shall be set up for ABA Track.
   a. Readers for outdoors shall be in a polymeric plastic enclosure with all electronics potted in plastic. Rated for operation in ambient conditions of minus 40 to plus 160 deg F in a humidity range of 10 to 90 percent.
6. Wiegand Swipe Reader: Set up for 33 or 26-bit data cards. Comply with SIA AC-01.
7. Touch-Plate and Proximity Readers:
   a. Active-detection proximity card readers shall provide power to compatible credential cards through magnetic induction, and shall receive and decode a unique identification code number transmitted from the credential card.
   b. Passive-detection proximity card readers shall use a swept-frequency, RF field generator to read the resonant frequencies of tuned circuits laminated into compatible credential cards. The resonant frequencies read shall constitute a unique identification code number.
   c. The card reader shall read proximity cards in a range from direct contact to at least 6 inches from the reader.

2.4 ACCESS CONTROL PERIPHERAL DEVICES

1. Items listed below are basis of design
   a. Request to Exit
      1) Bosch Security Systems, Inc
         a) DS160 Series High Performance Request-to-exit
         b) White
         c) With SLI
   b. Door Position Switch
      1) Assa Abloy
         a) Securitron DPS-M-GY

2) Securitron DPS-W-BK

2.5 CABLES

A. General Cable Requirements: Comply with requirements in “Conductors and Cables for Communications Systems" and as recommended by system manufacturer for integration requirement.

B. PVC-Jacketed, TIA 232-F.

1. Nine, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. Polypropylene insulation.
3. Aluminum foil-polyester tape shield with 100 percent shield coverage.
4. PVC jacket.
5. Conductors are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. Flame Resistance: Comply with UL 1581.

C. Plenum-Rated TIA 232-F Cables:

1. Nine, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. PE insulation.
3. Aluminum foil-polyester tape shield with 100 percent shield coverage.
4. Fluorinated ethylene propylene jacket.
5. Conductors are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. Flame Resistance: Comply with NFPA 262.

D. PVC-Jacketed, TIA 485-A Cables:

1. Paired, two pairs, twisted, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. NFPA 70 Type: Type CM.
6. Flame Resistance: Comply with UL 1581.

E. Plenum-Rated TIA 485-A Cables:

1. Paired, two pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. Fluorinated ethylene propylene insulation.
3. Unshielded.
4. Fluorinated ethylene propylene jacket.
5. NFPA 70 Type: Type CMP
6. Flame Resistance: NFPA 262, Flame Test.

F. Multiconductor, PVC, Reader and Wiegand Keypad Cables:

1. No. 22 AWG, paired and twisted multiple conductors, stranded (7x30) tinned copper conductors, semirigid PVC insulation, overall aluminum-foil/polyester-tape shield with 100 percent shield coverage, plus tinned copper braid shield with 65 percent shield coverage, and PVC jacket.
2. NFPA 70, Type CMG.
3. Flame Resistance: UL 1581 vertical tray.

4. For TIA 232-F applications.

G. Paired, PVC, Toggle Switch Button Cables:

1. Four pairs, No. 18 AWG, stranded (7x30) tinned copper conductors, polypropylene insulation, individual aluminum-foil/polyester-tape shielded pairs each with No. 18 AWG, stranded tinned copper drain wire, 100 percent shield coverage, and PVC jacket.
2. NFPA 70, Type CM.
3. Flame Resistance: UL 1581 vertical tray.

H. Paired, PVC, Reader and Wiegand Keypad Cables:

1. Three pairs, twisted, No. 20 AWG, stranded (7x28) tinned copper conductors, polyethylene (polyolefin) insulation, individual aluminum-foil/polyester-tape shielded pairs each with No. 22 AWG, stranded (19x34) tinned copper drain wire, 100 percent shield coverage, and PVC jacket.
2. NFPA 70, Type CM.
3. Flame Resistance: UL 1581 vertical tray.

I. Paired, Plenum-Type, Reader and Wiegand Keypad Cables:

1. Three pairs, No. 22 AWG, stranded (7x30) tinned copper conductors, plastic insulation, individual aluminum-foil/polypropylene-tape shielded pairs each with No. 22 AWG, stranded tinned copper drain wire, 100 percent shield coverage, and fluorinated-ethylene-propylene jacket.
2. NFPA 70, Type CMP.
3. Flame Resistance: NFPA 262 flame test.

J. Multiconductor, Plenum-Type, Reader and Wiegand Keypad Cables:

1. Six conductors, No. 20 AWG, stranded (7x28) tinned copper conductors, fluorinated-ethylene-propylene insulation, overall aluminum-foil/polyester-tape shield with 100 percent shield coverage plus tinned copper braid shield with 85 percent shield coverage, and fluorinated-ethylene-propylene jacket.
2. NFPA 70, Type CMP.
3. Flame Resistance: NFPA 262 flame test.

K. LAN Cabling:

1. Comply with requirements in Section 27 1513 "Communications Copper Horizontal Cabling."

2.6 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

3.1 SPECIAL REQUIREMENTS

A. At the exterior entry doors into common/shared space, ensure each card reader is connected to both Township Fire and Police systems.

3.2 INSTALLATION

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.

3.3 CABLING

A. Comply with NECA 1, "Good Workmanship in Electrical Construction."

B. Install cables and wiring according to requirements in Section 27 0513 "Conductors and Cables for Communications Systems."

C. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters. Conceal raceway and wiring except in unfinished spaces.

D. 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.

E. Install LAN cables using techniques, practices, and methods that are consistent with Category 5e rating of components and optical fiber rating of components, and that ensure Category 6 and optical fiber performance of completed and linked signal paths, end to end.

F. 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.

G. Install end-of-line resistors at the field device location and not at the controller or panel location.

3.4 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 500 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.

3.5 GROUNDING

A. Comply with Section 27 0526 "Grounding and Bonding for Communications Systems."

B. Comply with IEEE 1100, "Recommended Practice for Power and Grounding Electronic Equipment."

C. 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.

D. Bond shields and drain conductors to ground at only one point in each circuit.

E. 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.

3.6 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.

3.7 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.

3.8 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. LAN Cable Procedures: Inspect for physical damage and test each conductor signal path for continuity and shorts. Use tester approved for type and kind of installed cable. Test for faulty connectors, splices, and terminations. Test according to TIA 568-C.1, "Commercial Building Telecommunications Cabling Standards - Part 1: General Requirements." Link performance for balanced twisted-pair cables must comply with minimum criteria in TIA 568-C.1.
2. 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.
3. 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.

3.9 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.

END OF SECTION 28 1500

SECTION 32 1800 - ATHLETIC AND RECREATIONAL SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Line Painting.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 32 Section “Hot Mix Asphalt Paving”

1.2 PROJECT CONDITIONS

A. Substrate: Verify suitability of asphalt substrate prior to any application of surfacing materials.

PART 2 - PRODUCTS

2.1 LINES

A. Material: Acrylic latex mixture specially formulated for application to asphalt paving to produce basketball lined playing surface, non-slip. Color to be white.

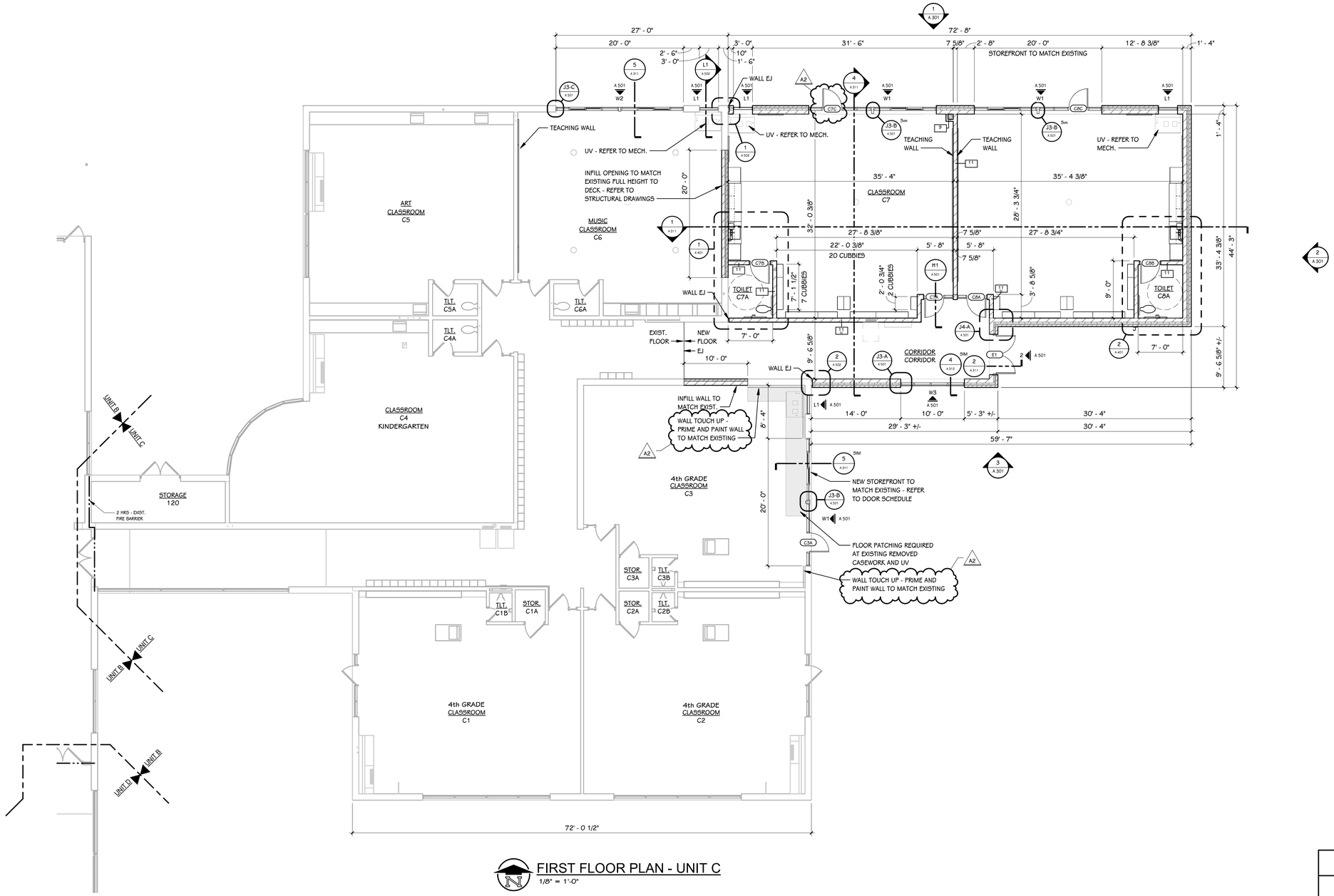
PART 3 - EXECUTION

3.1 PLACING LINES

A. Line markings:

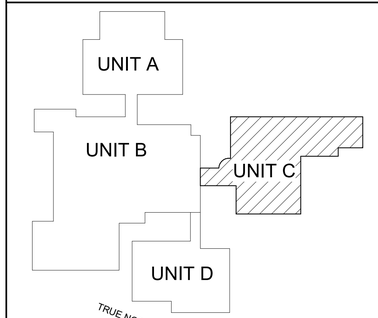
   1. Cleaning: Sweep and clean surface to eliminate loose material and dust.
   2. Striping: Use manufacturer’s recommended marking paint for application on hot mix asphalt. Allow surface coating to cure at least 8 hours before applying paint.
      a. Apply paint with mechanical equipment to produce uniform straight and curved edges. Apply at manufacturer’s recommended rate

END OF SECTION 32 1800



FIRST FLOOR PLAN - UNIT C
1/8" = 1'-0"

WINCHELL ELEMENTARY



KEY PLAN
SCALE: NO SCALE

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ANN ARBOR | DETROIT | TOWERPINKSTER.COM

ADDENDUM No. 2	August 07, 2024
ISSUED FOR	DATE

PROJECT TITLE
WINCHELL ELEMENTARY
CLASSROOM ADDITION

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
FIRST FLOOR PLAN - UNIT C

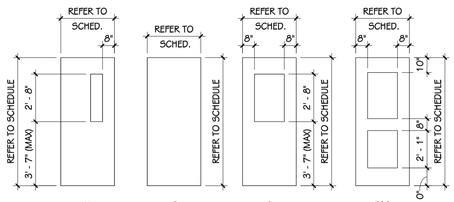
DATE
May 17, 2024

SHEET NUMBER
A 101C
23-607.00

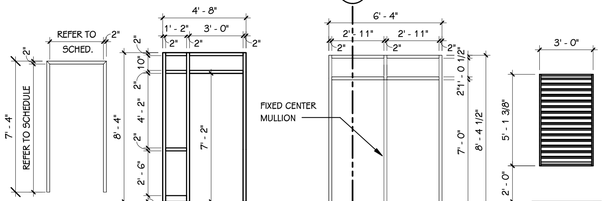
DOOR SCHEDULE

NUMBER		ROOM NAME	FIRE RATING		DOOR			SIZE		FRAME			DETAILS			GLASS	ACCESS CONTROLS					HDWR. SET	REMARKS
DOOR	ROOM		DOOR	FRAME	TYPE	MAT	FIN	WIDTH	HEIGHT	ELEV	MAT	FIN	HEAD	JAMB	SILL		A-PHONE	BARRIER-FREE	CARD READER	ELEC. LOCK HDWR.	MAG HOLD		
C3A	C3	CLASSROOM	-	-	FG2	AL	ANOD	3' - 0"	7' - 0"	W1	AL	ANOD	H3	J3-A, J3-B, J3-C	S3	LG-1	No	Yes	No	No	No	2	-
C7A	C7	CLASSROOM	45	45	F	WD	PREFIN	3' - 0"	7' - 2"	2	HM	ANOD	H1	J1	-	LG-1	No	Yes	No	No	No	3	GLAZING TO MATCH DOOR AND FRAME FIRE RATING.
C7B	C7A	TOILET	-	-	F	WD	PREFIN	3' - 0"	7' - 2"	1	HM	P-3	H2	J1	-	NA	No	Yes	No	No	No	4	-
C7C	C7	CLASSROOM	-	-	FG2	AL	ANOD	3' - 0"	7' - 0"	W1	AL	ANOD	H3	J3-A & J3-B	S3	LG-1	No	Yes	No	No	No	2	-
C8A	C8B	Room	45	45	F	WD	PREFIN	3' - 0"	7' - 2"	2	HM	ANOD	H1	J1	-	LG-1	No	Yes	No	No	No	3	GLAZING TO MATCH DOOR AND FRAME FIRE RATING.
C8B	C8A	TOILET	-	-	F	WD	PREFIN	3' - 0"	7' - 2"	1	HM	P-3	H2	J1	-	NA	No	Yes	No	No	No	4	-
C8C	C8B	Room	-	-	FG2	AL	ANOD	3' - 0"	7' - 0"	W1	AL	ANOD	H3	J3-A & J3-B	S3	LG-1	No	Yes	No	No	No	2	-
E1	CORRIDOR	CORRIDOR	-	-	FG2	AL	ANOD	6' - 0"	7' - 0"	3	AL	P-3	H3	J4-A & J4-B	S4	LG-1	No	Yes	Yes	Yes	No	1	-

A2

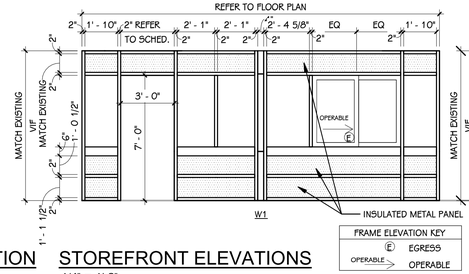


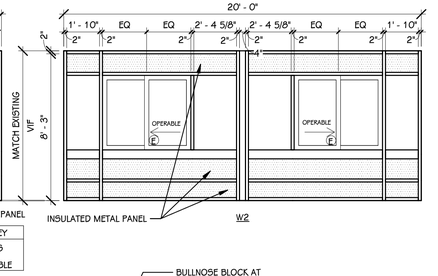
DOOR PANEL ELEVATIONS
1/4" = 1'-0"

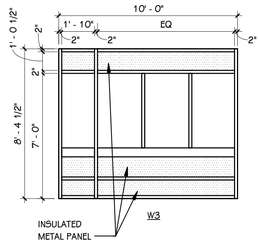


FRAME ELEVATIONS
1/4" = 1'-0"

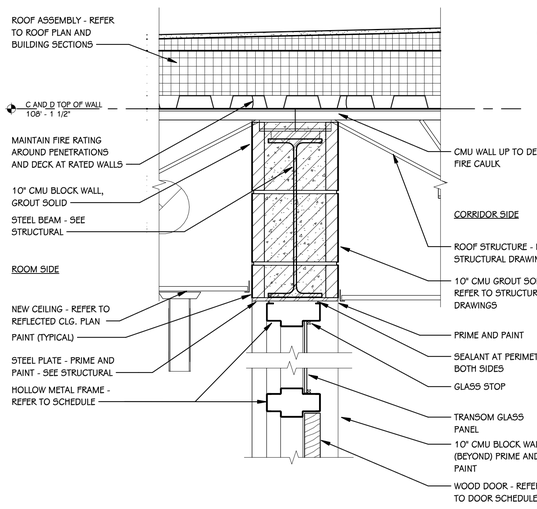
LOUVER ELEVATION
1/4" = 1'-0"



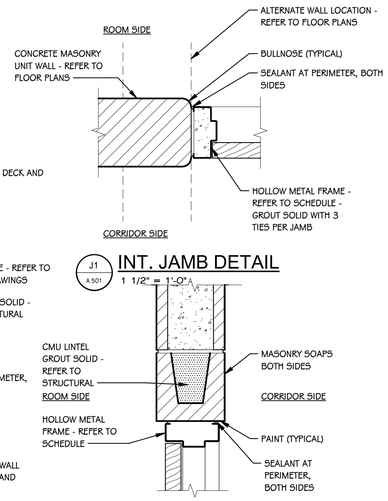




STOREFRONT ELEVATIONS
1/4" = 1'-0"

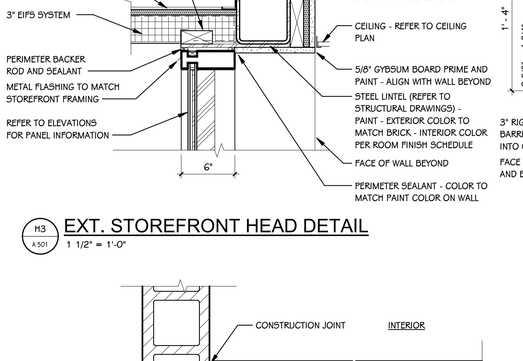


H1 A501 INT. HEAD DETAIL
1 1/2" = 1'-0"

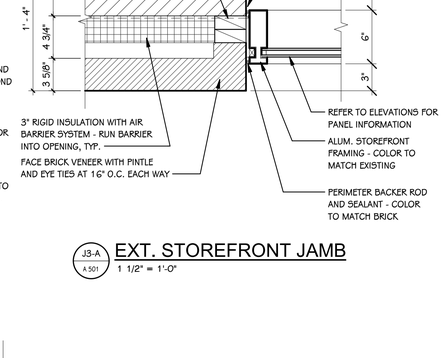


J1 A501 INT. JAMB DETAIL
1 1/2" = 1'-0"

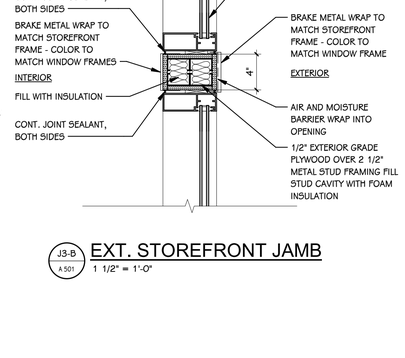
H2 A501 INT. HEAD DETAIL
1 1/2" = 1'-0"



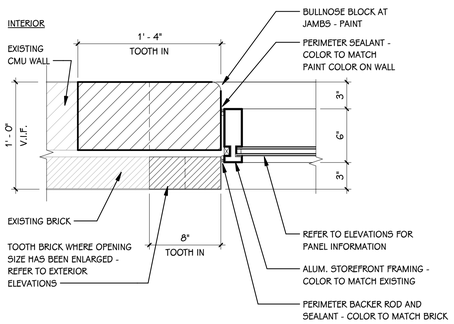
H3 A501 EXT. STOREFRONT HEAD DETAIL
1 1/2" = 1'-0"



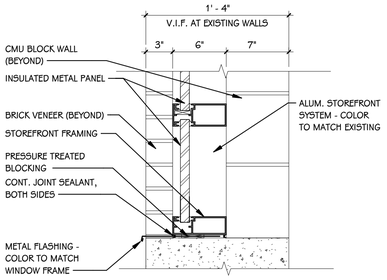
J3-A A501 EXT. STOREFRONT JAMB
1 1/2" = 1'-0"



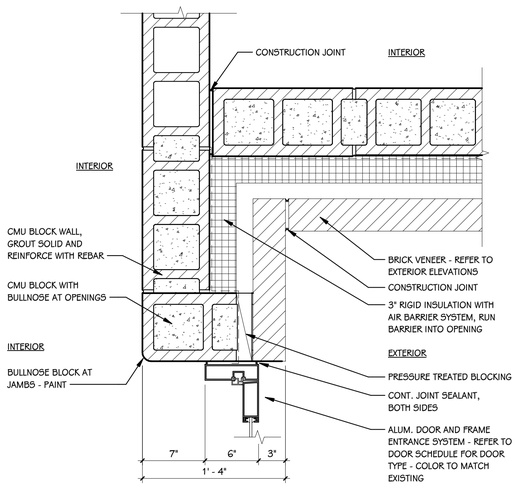
J3-B A501 EXT. STOREFRONT JAMB
1 1/2" = 1'-0"



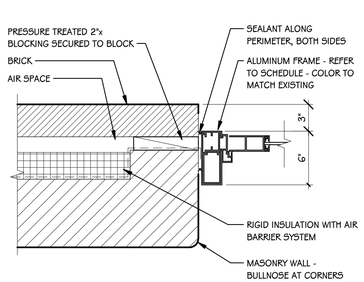
J3-C A501 EXT. STOREFRONT JAMB AT EXIST. WALL
1 1/2" = 1'-0"



S3 A501 EXT. STOREFRONT SILL DETAIL
1 1/2" = 1'-0"



J4-A A501 EXT. JAMB DETAIL - CORNER AT EXTERIOR DOOR
1 1/2" = 1'-0"



J4-B A501 EXT. JAMB DETAIL
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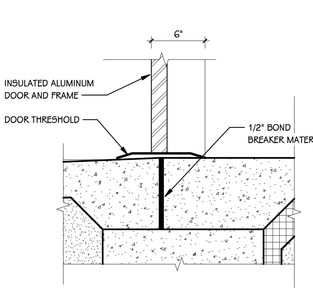

S4 A501 EXT. STOREFRONT SILL
1 1/2" = 1'-0"

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ADDENDUM No. 2 August 07, 2024

ISSUED FOR DATE

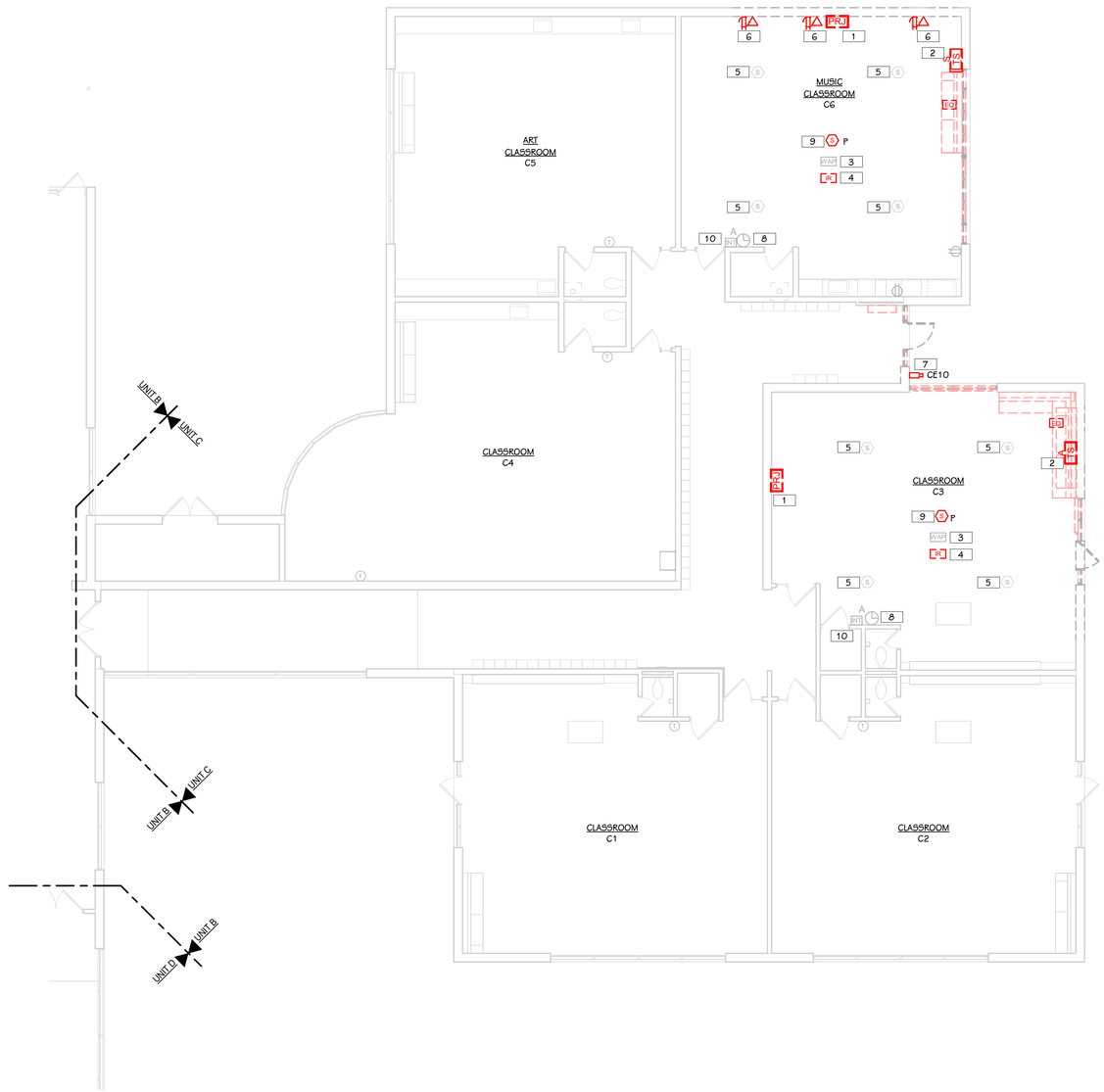
PROJECT TITLE
WINCHELL ELEMENTARY
CLASSROOM ADDITION

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
DOOR SCHEDULES

DATE
May 17, 2024

SHEET NUMBER
A 501
23-607.00



FIRST FLOOR TECHNOLOGY DEMOLITION PLAN - UNIT C
1/8" = 1'-0"

KEYED NOTES - TECHNOLOGY - DEMOLITION

A2

1 TECHNOLOGY CONTRACTOR SHALL REMOVE PROJECTOR, MOUNTING BRACKETS/HARDWARE AND ASSOCIATED AV EQUIPMENT THAT IS ATTACHED TO PROJECTOR. RETURN ALL TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

2 TECHNOLOGY CONTRACTOR SHALL REMOVE DATA CABLES THAT ARE INSTALLED IN TEACHER STATION BACK TO SOURCE. TECHNOLOGY CONTRACTOR TO REMOVE ALL AV CABLES AND RECYCLE.

3 TECHNOLOGY CONTRACTOR SHALL REMOVE WIRELESS ACCESS POINT AND RETURN TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008. COIL DATA CABLE IN CEILING SO IT IS NOT DAMAGED DURING CONSTRUCTION. DOCUMENT CABLE ID, MAC ADDRESS OF WAP & LOCATION OF DEVICE. PROVIDE ALL INFORMATION TO ARCHITECT AND KPS.

4 TECHNOLOGY CONTRACTOR SHALL REMOVE MICROPHONE SENSOR AND RETURN TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008. REMOVE WIRE BACK TO SOURCE AND RECYCLE.

5 TECHNOLOGY CONTRACTOR SHALL REMOVE A/V SPEAKERS AND RETURN TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008. COIL WIRE IN CEILING SO IT IS NOT DAMAGED DURING CONSTRUCTION.

6 TECHNOLOGY CONTRACTOR SHALL TRACE DATA CABLES BACK TO SOURCE AND REMOVE.

7 TECHNOLOGY CONTRACTOR SHALL REMOVE SECURITY CAMERA. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER AND ASSOCIATED ROOM NUMBER. RETURN DEVICE TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008. TRACE CABLE BACK TO SOURCE AND REMOVE.

8 TECHNOLOGY CONTRACTOR SHALL REMOVE CLOCK AND DOCUMENT LOCATION. LEAVE WIRING IN PLACE FOR FUTURE INSTALLATION. RETURN TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

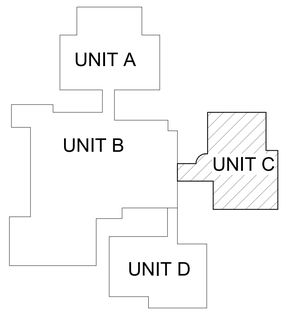
9 TECHNOLOGY CONTRACTOR SHALL REMOVE PAGING SPEAKER AND DISPOSE OF PROPERLY. COIL WIRE IN CEILING SO IT IS NOT DAMAGED DURING CONSTRUCTION.

10 TECHNOLOGY CONTRACTOR SHALL REMOVE CALL BUTTON AND DOCUMENT LOCATION. LEAVE WIRING IN PLACE FOR FUTURE INSTALLATION. TECHNOLOGY CONTRACTOR TO RETURN TO KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

ISSUED FOR	DATE
ADDENDUM #2	8-7-2024

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

WINCHELL ELEMENTARY



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
WINCHELL ELEMENTARY
CLASSROOM ADDITION

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
FIRST FLOOR TECHNOLOGY DEMOLITION PLAN - UNIT C

DATE
MAY 17, 2024

SHEET NUMBER
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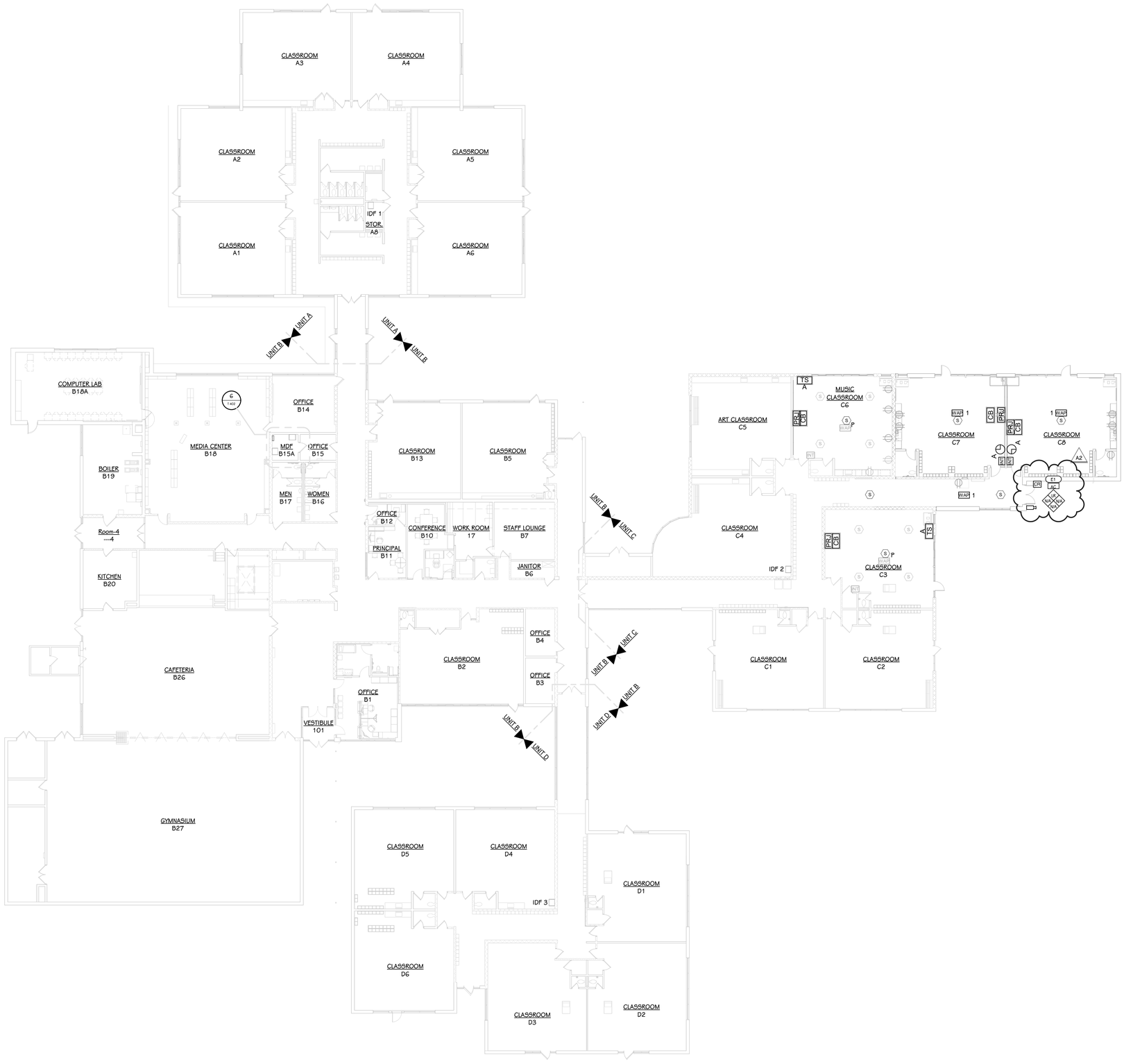
23-607.00



OVERAL FIRST FLOOR TECHNOLOGY PLAN
1/16" = 1'-0"

KEYED NOTES - TECHNOLOGY - CONSTRUCTION

1 TECHNOLOGY CONTRACTOR SHALL REINSTALL WIRELESS ACCESS POINT THAT WAS REMOVED DURING DEMO. CONNECT TO SAME DATA CABLE THAT IT WAS ORGINALLY CONNECTED TO. TECHNOLOGY CONTRACTOR SHALL RETRIEVE EQUIPMENT FROM KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

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3 POWER & LOW VOLTAGE ROUGH-IN ONLY. SYMBOL SHOWN FOR REFERENCE. PROJECTOR WILL BE PROVIDED/INSTALLED BY TECHNOLOGY CONTRACTOR DURING A SEPARATE PROJECT.

4 CEILING BOX SHALL BE PROVIDED/INSTALLED BY ELECTRICAL CONTRACTOR (FSR CB-22). EC SHALL PROVIDE UNSWITCHED 120V CIRCUIT.

5 TECHNOLOGY CONTRACTOR SHALL INSTALL A/V SPEAKER THAT WAS REMOVED DURING DEMO. USE EXISTING WIRING. TECHNOLOGY CONTRACTOR SHALL RETRIEVE EQUIPMENT FROM KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

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8 TECHNOLOGY CONTRACTOR SHALL PROVIDE (1) NEW DATA CABLE TO WIRELESS ACCESS POINT. TECHNOLOGY CONTRACTOR SHALL INSTALL NEW WIRELESS ACCESS POINT. WAP PROVIDED BY KPS TECHNOLOGY SERVICES.

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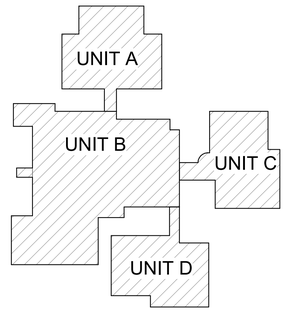
10 TECHNOLOGY CONTRACTOR SHALL PROVIDE AND INSTALL 120V NATIONAL TIME AND SIGNAL 12" DIAMETER ANALOG CLOCK. VERIFY COMPATIBILITY WITH CURRENT SYSTEM PRIOR TO ORDERING.

11 TECHNOLOGY CONTRACTOR SHALL REINSTALL EXISTING CALL BUTTON THAT WAS REMOVED DURING DEMO. TECHNOLOGY CONTRACTOR SHALL RETRIEVE EQUIPMENT FROM KPS TECHNOLOGY SERVICES LOCATED AT 600 W VINE ST., KALAMAZOO, MI 49008.

12 CABLING REQUIRED AT THIS DEVICE. SYMBOL SHOWN FOR REFERENCE. TECHNOLOGY CONTRACTOR SHALL INSTALL DEVICE ON A SEPARATE PROJECT.

WINCHELL ELEMENTARY



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
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CLASSROOM ADDITION

OWNER
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Kalamazoo, Michigan

SHEET TITLE
OVERAL FIRST FLOOR TECHNOLOGY PLAN

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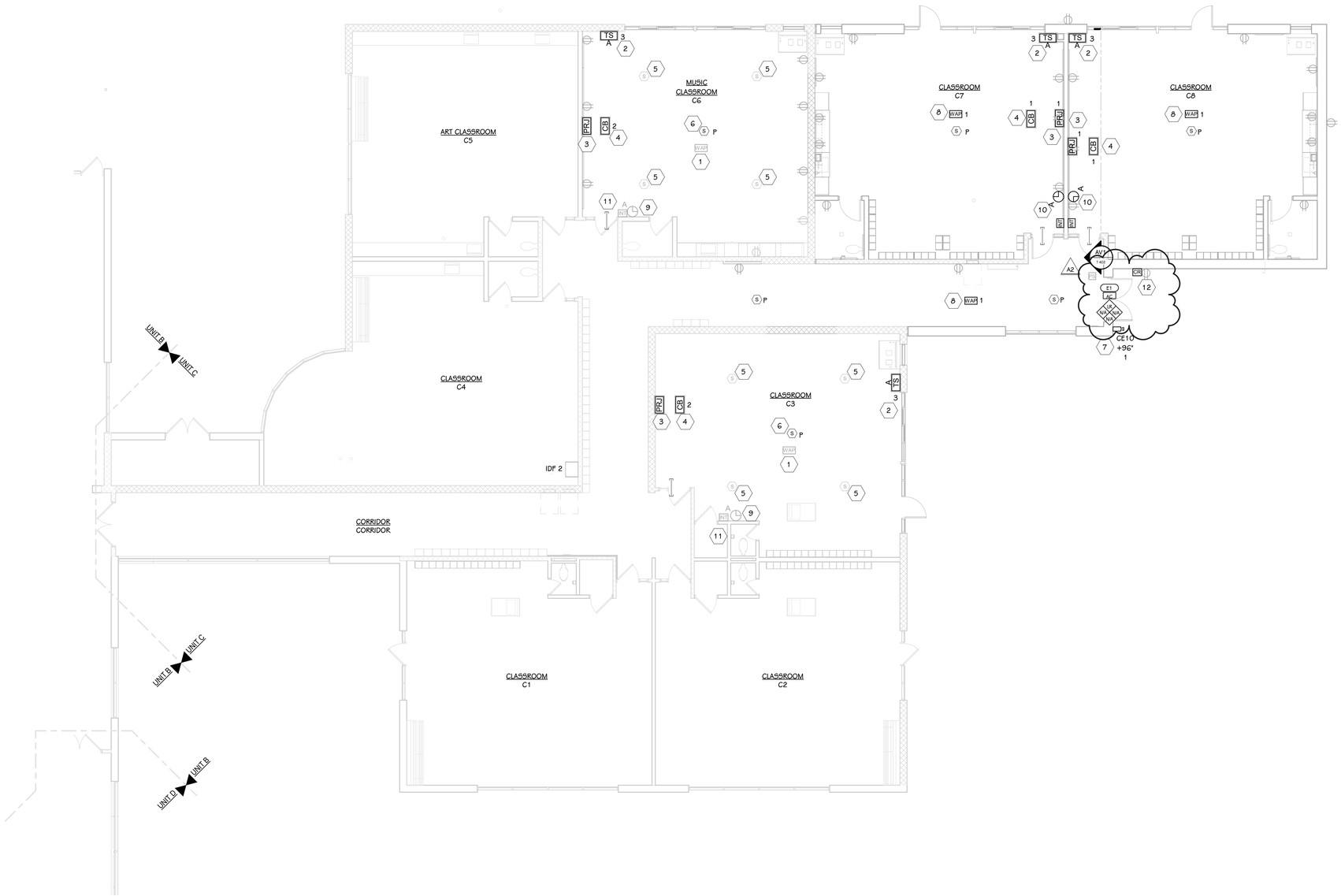
T 101
23-607.00



FIRST FLOOR TECHNOLOGY PLAN - UNIT C
1/8" = 1'-0"

KEYED NOTES - TECHNOLOGY - CONSTRUCTION

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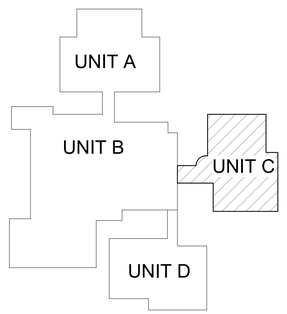

KEY PLAN
SCALE: NO SCALE

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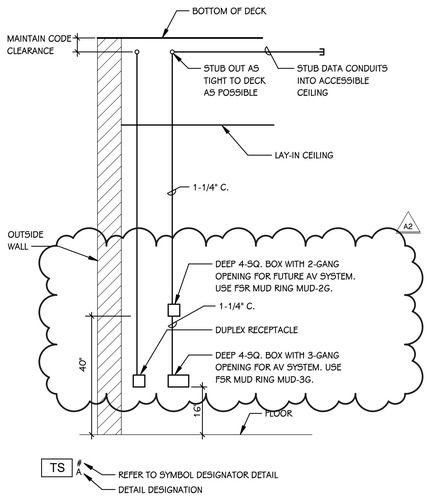
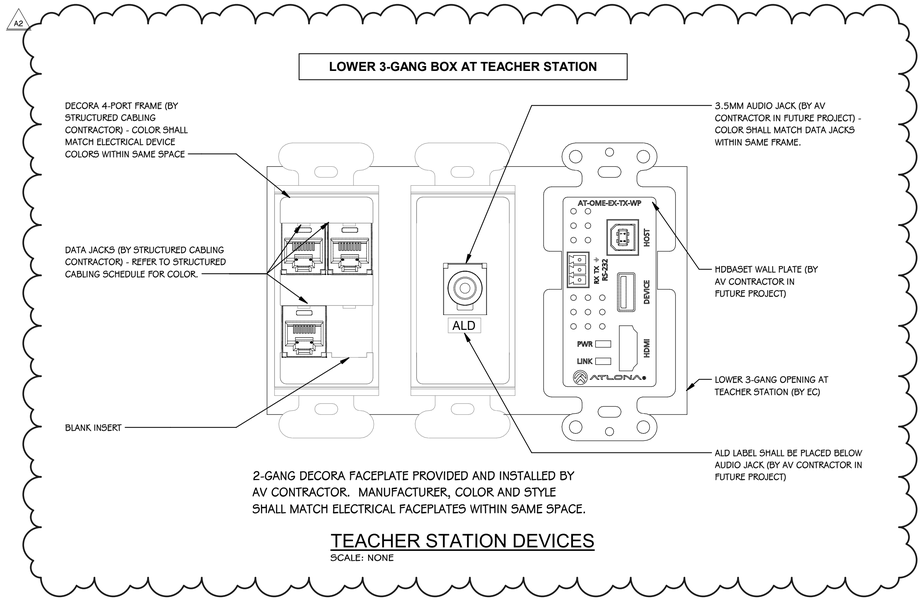
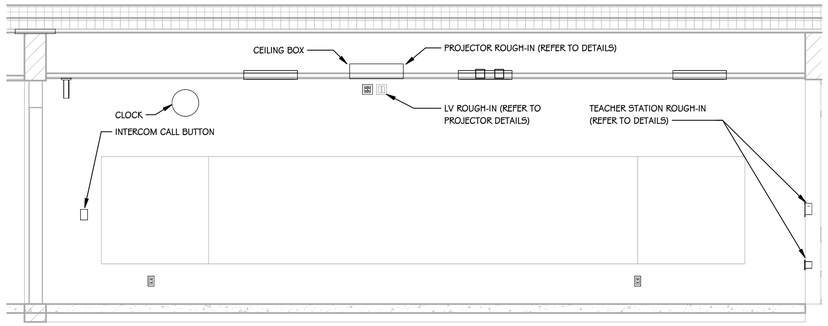


TEACHERS STATION ROUGH-IN DETAIL
SCALE: NONE

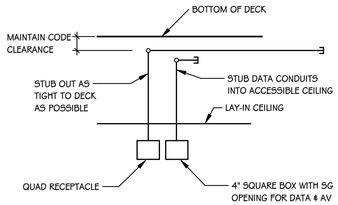


TEACHER STATION DEVICES
SCALE: NONE



AV1 / T 402

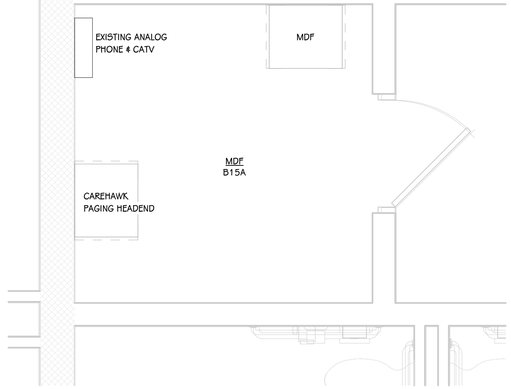
CLASSROOM TEACHING WALL ELEVATION (TYP)
3/8" = 1'-0"



BOTH RECEPTACLE AND DATA BOX SHALL BE INSTALLED IN CEILING TILES

PRJ

RECESSED SHORT THROW PROJECTOR
SCALE: NONE



6 / T 402

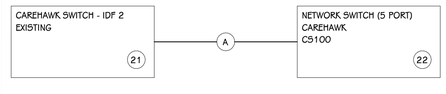
MDF B15A ENLARGED VIEW
SCALE: NONE

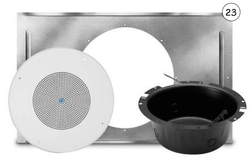
IDF 2 DETAILS
SCALE: NONE

EXISTING CAREHAWK HEADEND
SCALE: NONE

EXISTING ANALOG & CATV
SCALE: NONE

NOTE: ALL RISER DIAGRAMS INDICATE INTENDED SIGNAL FLOW/FUNCTIONALITY. INSTALLER IS RESPONSIBLE FOR INCLUDING ANY/ALL DEVICES, CABLES, ADAPTERS, LICENSES, AND ACCESSORIES TO PROVIDE COMPLETE AND FUNCTIONAL SYSTEMS REGARDLESS OF WHETHER ALL COMPONENTS ARE INDICATED ON PROJECT DRAWINGS.





CAREHAWK PAGING DETAILS
SCALE: NONE

CAREHAWK EQUIPMENT SCHEDULE

KEY #	DESCRIPTION	MANUFACTURER	PART #	COMMENTS
21	CAREHAWK SWITCH - IDF 2	EXISTING		
22	NETWORK SWITCH (5 PORT)	CAREHAWK	CS100	
23	PAGING SPEAKER KIT	ATLAS IED	SD72W-KIT	
24	INTERCOM CALL BUTTON	CAREHAWK	CS35	
A	CAT6 BULK CABLE			REFER TO STRUCTURED CABLING EQUIPMENT SCHEDULE

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CLASSROOM ADDITION

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Kalamazoo, Michigan

SHEET TITLE
TECHNOLOGY DETAILS

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MAY 17, 2024

SHEET NUMBER
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23-607.00

ACCESS CONTROL DOOR SCHEDULE

NUMBER	ACCESS CONTROLS	SECURITY INFO					
DOOR	CARD READER	LOCKING HARDWARE TYPE	DOOR CONTACT	OTHER	REX	DOOR DETAIL #	PROGRAMMING NOTES
E1	Yes	LR	N/A	N/A	N/A		1, 2, 5

PROGRAMMING NOTES LEGEND:
1.) DOOR NORMALLY LOCKED VIA ACCESS CONTROL SYSTEM.
2.) PRESENTATION OF VALID CREDENTIAL TO CARD READER MOMENTARILY UNOCKS ELECTRIFIED HARDWARE AND ALLOWS ACCESS.
3.) UPON ACTIVATION OF RELEASE BUTTON TIED THROUGH THE ACCESS CONTROL SYSTEM, THE ELECTRIFIED HARDWARE MOMENTARILY UNLOCKS AND ALLOWS ACCESS.
4.) UPON ACTIVATION OF RELEASE VIA INTERCOM SYSTEM, A RELAY TO THE ACCESS CONTROL PANEL WILL MOMENTARILY UNLOCK ELECTRIFIED HARDWARE, ALLOWING ACCESS.
5.) DURING THE EVENT OF A LOCKDOWN, ELECTRIFIED HARDWARE REVERTS TO A LOCKED STATE, ONLY ALLOWING SCHOOL-DETERMINED CREDENTIALS TO UNLOCK ELECTRIFIED HARDWARE UNTIL LOCKDOWN IS DEACTIVATED.
6.) DOOR NORMALLY UNLOCKED DURING REGULAR HOURS.
7.) DOOR CONTACT FOR MONITORING ONLY.
8.) DOOR NORMALLY LOCKED DURING REGULAR HOURS (MANUAL LOCK).

*IN THE EVENT THAT ANY DOOR IS PROPPED OPEN FOR "X" AMOUNT OF TIME, OWNER & RECEPTION TO BE NOTIFIED VIA TEXT MESSAGE AND E-MAIL. "X" TO BE DETERMINED BY OWNER.

ACCESS CONTROL NOTES:
- ALL TIMES LISTED BELOW ARE APPROXIMATES; FINAL PROGRAMMED TIMES SHALL BE COORDINATED WITH OWNER.

- COORDINATE DOOR UNLOCK AND LOCK SCHEDULE WITH OWNER. AT MINIMUM, PROVIDE SCHEDULED UNLOCK FOR THE FOLLOWING:
  - NORMAL SCHOOL START (E.G. 7:30AM-8:00AM UNLOCK)
  - DELAYED SCHOOL START (E.G. TWO HOUR DELAY)
  - HALF DAY SCHEDULE
  - NON-SCHOOL DAY
  - EVENT PROGRAMMING x3 (E.G. THREE SEPARATE EVENT TEMPLATES THE OWNER MAY DESIRE, SUCH AS A BASKETBALL OR VOLLEYBALL GAME).
  - LOCKDOWN (OVERRIDES ALL SCHEDULES, SETS ALL DOORS TO LOCKED, AND RESTRICTS CARD ACCESS TO AN "EXECUTIVE PRIVILEGE" ROLE – E.G. SCHOOL RESOURCE OFFICER, DISTRICT ADMIN, AND OTHERS THE OWNER DEEMS ACCEPTABLE.

- REFER TO DRAWINGS FOR CARD READER LOCATIONS, DOORS REQUIRING READ IN/READ OUT CREDENTIALING REQUIREMENTS.

- REFER TO ELECTRICAL DRAWINGS AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR SEQUENCING ACCESS CONTROL SYSTEM WITH AUTOMATIC DOOR OPERATORS. DOORS WITH AUTOMATIC OPERATORS SHALL NOT OPERATE UNLESS THE ACCESS CONTROL PLATFORM HAS SET THE DOOR TO "UNLOCKED", OR AN APPROPRIATE ACCESS CREDENTIAL HAS BEEN PRESENTED.

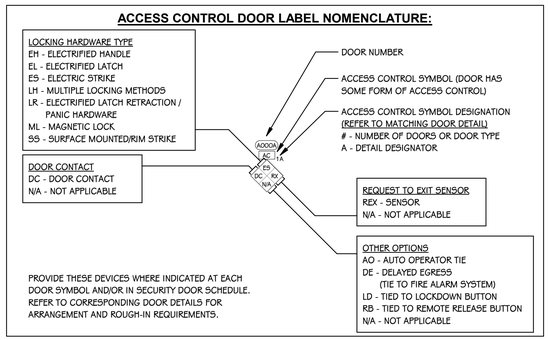
- REFER TO ELECTRICAL DRAWINGS AND COORDINATE WITH FIRE ALARM CONTRACTOR FOR ALL DOORS REQUIRING INTERFACE WITH FIRE ALARM, E.G. DOORS NOTED TO FAIL SAFE UPON SMOKE/FLOW ACTIVATION. MANUAL FIRE PULL STATIONS SHALL NOT UNLOCK ANY DOORS.

- REFER TO ELECTRICAL DRAWINGS AND COORDINATE WITH FIRE ALARM CONTRACTOR FOR REQUIRED RELAYS TO RELEASE MAGNETICALLY HELD DOORS UPON ACTIVATION OF LOCKDOWN.

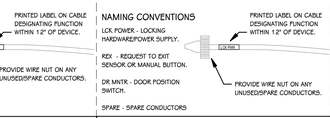
- REFER TO ARCHITECTURAL DOOR SCHEDULE AND SPECIFICATION SECTION 08 "DOOR HARDWARE" FOR COORDINATING LOCK POWER FOR ELECTRIFIED HARDWARE (I.E. ELECTRIC STRIKES, LATCH RETRACTION, ELECTRIFIED TRIM/HANDLE, MAGLOCKS, ETC.), INCLUDING QUANTITY OF ELECTRIFIED HARDWARE PER DOOR. PROVIDE ADEQUATE POWER SUPPLIES TO POWER ELECTRIFIED HARDWARE ASSOCIATED WITH EACH ACCESS CONTROL PANEL AT FULL CAPACITY (E.G. IF ACP-2B IS ONLY DESIGNED TO INTERFACE WITH 4 DOORS BUT CAN BE SIZED TO 12, PROVIDE ENOUGH POWER SUPPLY CAPACITY TO POWER ADDITIONAL 8 DOORS).

- ALL ACCESS CONTROL WORK DONE PERTAINING TO ELEVATORS SHALL BE COORDINATED WITH THE ELEVATOR CONTRACTOR FOR CODE COMPLIANCE AND INTERFACE WITH ELEVATOR CONTROLLER.

ACCESS CONTROL DOOR LABEL NOMENCLATURE:

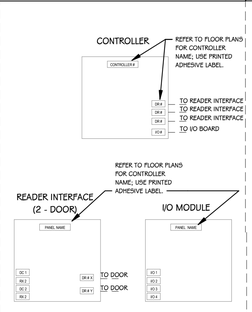


ACCESS CONTROL CABLES AT DEVICE

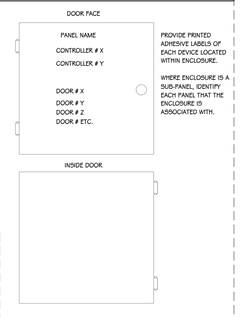


ACCESS CONTROL CABLES AT PANEL

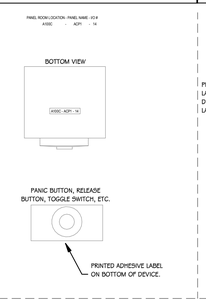
ACCESS CONTROL LABELING WITHIN PANEL



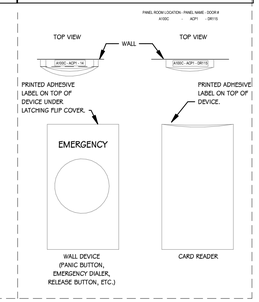
ACCESS CONTROL PANEL LABELING



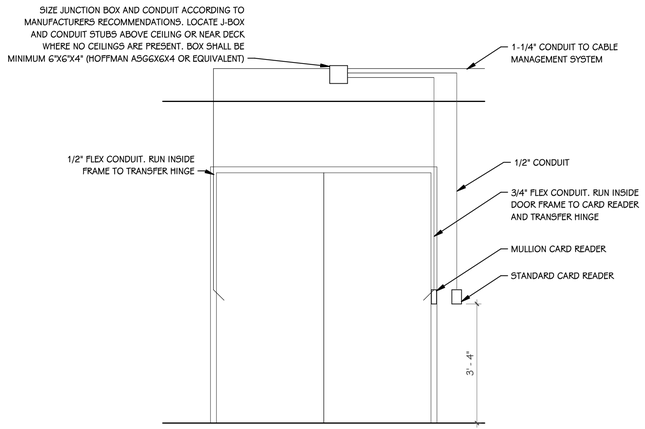
UNDER DESK DEVICE LABELING



WALL DEVICE/CARD READER LABEL



TYPICAL SECURITY DEVICE LABELING DETAIL
SCALE: NONE



AC DOUBLE DOOR WITH LATCHES
SCALE: NONE

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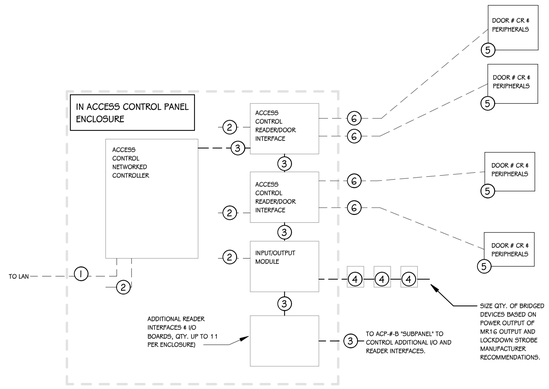
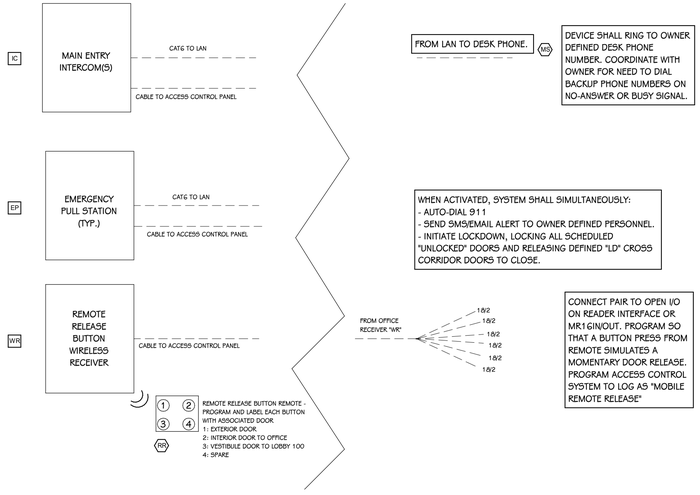


	DEVICE	MANUFACTURER/PART #	NOTES
1	CATEGORY CABLE	SEE SPEC 27 1513	PROVIDED BY CONTRACTOR RESPONSIBLE FOR SECTION 27 1513.
2	18AWG/2C	SEE SECURITY DEVICE AND CABLING CHART	12-24 VDC CONNECTION TO POWER DIST. MODULE/POWER SUPPLY
3	RS-485	BELDEN 82841	PROVIDE RS-485 LOOP TO CONNECT CONTROLLER TO MAX. NUMBER OF SUPPORTED DOWNSTREAM DEVICES.
4	LOCKDOWN DEVICE	SEE SECURITY DEVICE AND CABLING CHART FOR PART #	EXACT LAYOUT AND QTY. OF EACH DEVICE PER MODULE SHALL BE SIZED, CONFIGURED, AND SUPPLIED TO SUPPORT # OF DEVICES ON PLANS.
5	CR, RX, DC, LD, RB, & OTHER CONTROL INTERFACES		
6	MULTICONDUCTOR CABLE		

COORDINATE FAIL-SAFE VS. FAIL-SECURE LOCK CONNECTIONS IN COMPLIANCE WITH FIRE CODE AND COORDINATED WITH PROGRAMMING NOTES ON ACCESS CONTROL SCHEDULE.

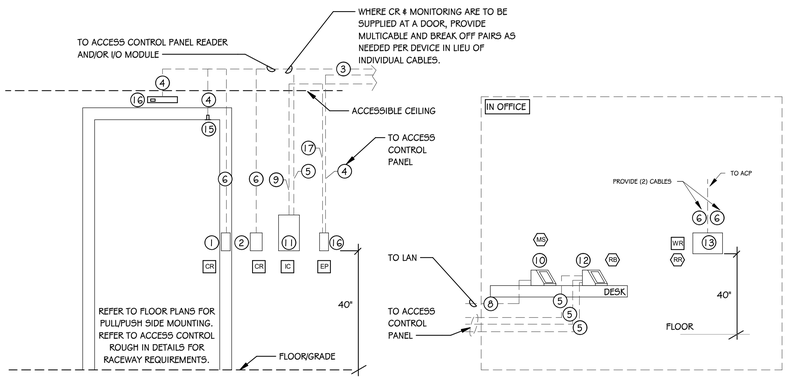
ACCESS CONTROL PANEL AND INTERFACE GENERAL WIRING DIAGRAM

SCALE: NONE



INTERCOM AND EMERGENCY PULL STATION RISER

SCALE: NONE



	DEVICE	MANUFACTURER/PART #	NOTES
1	CARD READER - MULLION	HID SIGNO 20TKS-00-000000	USE WHEN CR SYMBOL IS SHOWN ON MULLION, FRAME, OR OTHER NARROW-WIDTH MOUNTING APPLICATION.
2	CARD READER - STANDARD	HID SIGNO 40TKS-00-000000	SCHLAGE MTB SERIES ACCEPTABLE EQUIVALENT.
3	CABLE - MULTICABLE	BELDEN 658AFJ ACCESS CONTROL	USE WHEN DOOR REQUIRES CR AND ANY OTHER DEVICE. OTHERWISE, SEE BELOW CABLES.
4	CABLE - 18/2 AWG/CONDUCTOR	BELDEN 6300FC	UPSIZE CABLE AS REQUIRED TO ELIMINATE SIGNAL LOSS.
5	CABLE - 18/4 AWG/CONDUCTOR	BELDEN 6341FE	UPSIZE CABLE AS REQUIRED TO ELIMINATE SIGNAL LOSS.
6	CABLE - 18/6 AWG/CONDUCTOR	BELDEN 6304FE	UPSIZE CABLE AS REQUIRED TO ELIMINATE SIGNAL LOSS.
7	CABLE - INTERCOM MASTER STATION DOOR RELEASE	N/A	DOOR RELEASE IS CONFIGURED SEPARATELY (SEE NO. 5, 13, & 14).
8	CABLE - INTERCOM MASTER STATION	CATEGORY CABLE	REFER TO COMMUNICATION CABLE & COMPONENT LEGEND
9	CABLE - INTERCOM DOOR STATION	CATEGORY CABLE	REFER TO COMMUNICATION CABLE & COMPONENT LEGEND
10	DEVICE - INTERCOM MASTER STATION	OWNER'S DESK PHONE - EXISTING	COORDINATE WITH OWNER TO PROGRAM PHONES FOR INTERCOM DIALING AND DOOR RELEASE THROUGH ACP
11	DEVICE - INTERCOM DOOR STATION	EXISTING	RECESS IN NEW BRICK OR SURFACE MOUNT ON EXISTING BRICK.
12	DEVICE - DESK MOUNT CONTROLS BOX & SWITCHES	EXISTING	COORDINATE FINAL LOCATION WITH OWNER AT TIME OF INSTALL. PROVIDE ADHESIVE LABLE OF EACH DOOR TIED TO SPECIFIC RELEASE.
13	DEVICE - REMOTE RELEASE TRANSCEIVER & BUTTONS	EXISTING	PROVIDE (5) PROGRAMMED PENDANT REMOTES FOR MAIN OFFICE.
14	DEVICE - RELEASE BUTTON MOUNTED UNDER DESK	EXISTING	
15	DEVICE - DOOR CONTACT	SCHLAGE 679-05HM	
16	DEVICE - REQUEST TO EXIT SENSOR	SCHLAGE SCAN II WHT	MOUNT VERTICALLY AT MECH/ELEC GATE; HORIZONTALLY IN ALL OTHERS.

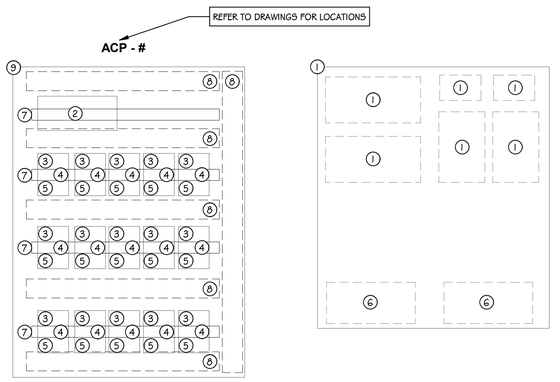
SECURITY END OF LINE DEVICE AND CABLING CHART

SCALE: NONE

GENERAL NOTES APPLY TO ALL LV CABLE*

- ALL CABLE SHALL BE PLENUM RATED IN PLENUM SPACE.
- CABLES UTILIZING WIEGAND COMMS SHALL NOT EXCEED 500FT TO ACCESS CONTROL PANEL.
- CABLES UTILIZING OSDP SHALL NOT EXCEED 2000FT.
- CABLE SIZING SHALL BE VERIFIED PRIOR TO INSTALLATION AND UPSIZED AS NECESSARY TO ELIMINATE SIGNAL LOSS.
- CABLES SHALL BE RUN IN CONTINUOUS OR NON-CONTINUOUS CABLE MANAGEMENT SYSTEMS. FREE-RUN CABLING IS NOT ACCEPTABLE ANYWHERE. ZIP TIES, ELECTRICAL TAPE, OR OTHER SIMILAR ADHESIVES ARE NOT ACCEPTABLE.
- WHERE IN EXPOSED AREAS (E.G. UNDER DESK, ALONG COUNTERTOP), CABLES SHALL BE RUN IN MESH CABLE SLEEVE (TECHFLEX F6N2.00-25-BLACK, CUT TO SIZE).
- ALL DEVICES THAT CONTROL DOOR HARDWARE SHALL BE CABLED TO INTERFACE THROUGH THE ACCESS CONTROL PLATFORM AND NEVER BE DIRECTLY CONNECTED TO THE LOCK POWER.

*SEE COPPER CABLE DETAIL AND SPECIFICATIONS FOR REQUIREMENTS AND CONDITIONS.



	DEVICE	MANUFACTURER/PART#	NOTES
1	ACCESS CONTROL POWER ENCLOSURE, POWER SUPPLIES, POWER DISTRIBUTION MODULES, LOCK POWER	LIFE SAFETY POWER FPO250/250-2C6P2D8PE4	N/A
2	ACCESS CONTROL NETWORKED CONTROLLER	TRIDIUM JACE 8000	N/A
3	ACCESS CONTROL 2-DOOR READER INTERFACE	TRIDIUM T-SEC-R2R	EXACT LAYOUT AND QTY. OF EACH MODULE PER ENCLOSURE SHALL BE CONFIGURED AND SUPPLIED TO SUPPORT # OF DEVICES ON PLANS. *RIO DEVICES REQUIRE 2X THE ALLOCATED SPACE AS A SINGLE R2R
4	ACCESS CONTROL INPUT MODULE*	TRIDIUM T-SEC-RIO	
5	ACCESS CONTROL OUTPUT MODULE*	TRIDIUM T-SEC-RIO	
6	ENCLOSURE BATTERY	MFG. RECOMMENDED, SEALED LEAD ACID OR GEL TYPE	SIZE BATTERY TO PROVIDE UNINTERUPTED POWER TO CONTROLS AND LOCKS FOR MIN. 6 HOURS AT FULL CAPACITY
7	DIN RAIL	OPEN	N/A
8	WIRING DUCT CABLE MANAGEMENT	PANDUIT F2X#LGG	RIGHT SIZE WIRING DUCT TO FIT WITHIN ENCLOSURE WITH REQUIREMENTS SHOWN IN ILLISTRATION ABOVE
9	ACCESS CONTROL DEVICES ENCLOSURE	LIFE SAFETY POWER E(x)	RIGHT SIZE ENCLOUSRE TO SUPPORT 15 R2R/RIO'S + 1 JACE 8000 ON (4) DIN RAILS W/ WIRING DUCT

COORDINATE POWER CONNECTIONS WITH ELECTRICAL CONTRACTOR; CONNECTIONS SHALL BE HARDWIRED TO POWER SUPPLIES.

TRIDIUM AC PANEL RISER

SCALE: NONE

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ADDENDUM #2	8-7-2024
ISSUED FOR	DATE

PROJECT TITLE
WINCHELL ELEMENTARY
CLASSROOM ADDITION

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ACCESS CONTROL DETAILS

DATE
MAY 17, 2024

SHEET NUMBER
T 442
23-607.00

KPS Winchell ES Classroom Addition - Pre-Bid RFI Log

Date - 8/6/2024

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RFI #	Company Submitting RFI	Date Received	RFI Description	RFI Response
1	SA Morman	7/23/2024	A501 Door Schedule does not include Hardware Sets. Specifications 087100 Door Hardware does not include Opening Assignments for the Hardware Sets. Please advise.	TP: This will be addressed in Addendum No. 2
2	Earley Concrete	7/26/2024	Is termite treatment required on this project.	TP: Termite treatment is not required.
3	Ritsema	7/31/2024	Is 3" EIFS required at the soffits. The existing soffit underside appears to be painted plywood. Can the EIFS be eliminated from this project?	TP: EIFS soffit is required.
4	MCM	7/31/2024	Who is required to remove and reinstall ceilings in the coordidoors.	TSC: BC #5 - General Trades per Addendum No. 2.
5	Davenport Masonry	7/31/2024	Everything that I see talking about the grout inside the CMU says grout solid. Are we grouting all the CMU solid?	TP: TP: Refer to SG 005, "CMU Wall Reinforcing and Schedule", note 7. "Grout CMU cells as follows: A. All cells containing reinforcing bars B. Below lintel bearing, down to foundation C. Where required for anchoring to CMU, and D. Where specifically shown in the details."
6	Davenport Masonry	7/31/2024	On sheet A101C, it says "wall touch up to match existing". Can you elaborate on what that will entail?	TP: This will be addressed in Addendum No. 2
7	Division 5 Metalworks	8/6/2024	IS AISC certification mandatory for the Structural Steel Bid Category.	TP: This will be addressed in Addendum No. 2
8	Jergens	8/6/2024	Please clarify the intent for the temporary start-up cartridge filter piping detail on drawing M501. If we are to clean all strainers at each piece of equipment, can you quantify how many pieces of equipment there are throughout the building? Also, is the intent that we are flushing and filling the entire existing heating system vs just our newly installed pipe? Would there be any consideration towards a separate allowance specifically for the flushing and cleaning of the existing heating system given the unknown condition of the existing system?	The intent is to flush the entire heating system during start-up (not just the newly installed piping) in accordance with "Cleaning & Treatment of Hydronic Systems" under specification section 23 2500 HVAC Water Treatment. During start-up the full flow of the heating system would go through the temporary cartridge filter for a period of 8 to 72 hours. After flushing the entire system all strainers in the heating system are to be opened, cleaned, and inspected. Quantity of strainers to be determined in the field.
9	Lounsbury Excavating	8/6/20024	Per sheet C200, Is the existing BB court an alternate to mill 1.5”, repave 1.5”, strip, added asphalt and reset BB hoops? Or is this in the base bid and no alternate? Existing Court seems to be in horrible shape, and I can’t see that milling the surface will end well. I believe this will cause more damage in the end. Could this be a removal and proof roll existing gravel subgrade and repave court?	This will be addressed in Addendum No. 2. **Base bid:** Base bid is restriping the revised basket ball court. Basket ball hoops are to be removed, salvaged and reinstalled as part of basebid as well. **Alternate:** Is mill and repave 1.5" of asphalt.