ADDENDUM TO THE CONTRACT

for the

BARTLETT REGIONAL HOSPITAL
CAMPUS DOOR UPGRADES 2021
Contract No. BE22-171

ADDENDUM NO.: **FOUR** **CURRENT DEADLINE FOR BIDS:** **December 21, 2021**

PREVIOUS ADDENDA: **THREE**

ISSUED BY: City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

DATE ADDENDUM ISSUED: **December 9, 2021**

The following items of the contract are modified as herein indicated. All other items remain the same. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Public Purchase webpage at: https://www.publicpurchase.com/gems/juneau,ak/buyer/public/home

CLARIFICATIONS:

Question: *"Sheet A002 door schedule does not call out a hardware set for doors 2208C, 2303, 2700A. Is this correct?"*

Response: See Drawing Item No. 3 in this Addendum.

Question: *"087100 Door hardware pages 21 – 30 list the sets and do not call out doors 2208C and 2700A. Is this correct?"*

Response: See Project Manual Item No. 2 in this Addendum.

Question: *"087100 Door hardware page 26 set 11.1 does call out door 2303. It's not on the A002 schedule so is this correct?"*

Response: Yes, door hardware set is 11.1, see above.

Question: *"Attached is a spreadsheet labeling components not listed in the hardware sets, but shown in the electrical drawings, is architectural or electrical missing information?"*

Response: See Drawing Item No. 3 in this Addendum.

Question: *"The architectural drawings we come up with 28 doors that have notes that pertain to electrical coordination/installation. On the electrical drawings there are only 15 doors shown having work associated. Are the A or E drawings covering all the scope?"*

Response: See Drawing Item No. 5 & 6 in this Addendum.

Question: *"New exit signs are being installed and electrical installations are shown to the nearest junction box. Do these junction boxes depicted contain the required unswitched circuit for these exit signs?For the two locations shown to have exit signs added, they are shown to be connected to a junction box in corridor 1400A and to an existing lighting fixture in corridor 2208. Is the hallway lighting circuit unswitched and suitable to power the exit signs or will it be necessary to pull conductors through the existing raceway beyond the details provided to connect to a suitable unswitched, exit sign circuit?"*

Response: Sheet E200, Detail 1: The existing lighting circuiting in the shown conduit path contains a non-switched lighting circuit according to BRH record drawings. Sheet E201, Detail 3: Extend a non-switched lighting circuit from the exit sign at the east end of Corridor 2208 through the shown conduit (in the center of the corridor) to the new exit sign.

Question: *"I believe most door magnets in the hospital are powered from a fire alarm, door holding circuit. The drawings don't appear to show that, so we're wondering if these will be powered from the door power supplies? Details 1 & 3 on sheet E200 show 5ea. electromagnetic door holders. Are these to be powered from door controllers or is there an existing door magnet circuit on site that releases in the event of a fire alarm? What voltage are the door holder magnets to be? This will help determine wiring methods and fire release of the doors."*

Response: Per the Legend on sheet E100, the magnetic door holders are a part of the fire alarm system.
The fire alarm magnetic door holders are circuited from the fire alarm control panel with a dedicated 24VDC circuit according to BRH record drawings. Coordinate the extension of the existing fire alarm system with a fire alarm subcontractor who is licensed to service the existing system.

Question: *"After yesterday's walk through we've come up with a question. What is the plaster material expected to be and how was it put in? Is it concrete hardness…or crumbly? When we remove the frames, does the old plaster need to be removed flush to a cold joint or just knock it down because the new jamb will go back over and cover it? Are we required to infill the new jambs with some kind of material? What takes place at this infill with the old suspect plaster material?"*

Response: While the primary goal of this project is to bring the doors at BRH into compliance with code, we also have the goal of removing asbestos-containing materials completely each time we encounter them. Plaster within original door frames has been found to contain asbestos in some cases, so all door plaster is to be completely abated from framing and other surrounding surfaces with no visible or removable residue remaining. See addendum for additional language. Plaster of varying textures has been encountered in original door frames. Some frames have no plaster, some have friable plaster, and others have a more cementitious plaster. We have no way to know which type of plaster will be encountered within any particular door frame, since the mix of plaster types was found on door frames of similar types in adjacent areas of the building. In addition (see Section 028213, 1.2D(2)), all gypsum wallboard is to be cut back a minimum of 6 inches from all door framing on both sides of the wall to assure that all new door frames are installed in gypsum board with asbestos-free joint compound. Where practical, gypsum wallboard with ACM joint compound is being abated from entire walls along with the door frames. Replace door jambs, patch surfaces and finishes to match adjacent as specified.

Question: *"Take a look at door # 2208B. I think this more glass than you can put in a 90 min door or at least if it needs to be rated?"*

Response: See Drawing Item No. 3 in this Addendum.

Question: *"There are several hardware sets that identify "power" or "card reader" to be "By Security Integrator ". Does this mean that the owner will contract with the security integrator directly or are they to be carried as a subcontractor?"*

Response: The security integrator with a license to service the existing access control system shall be subcontracted by the Contractor to perform all necessary work for the extension of the existing access control system.

Question: *"If the security integrator is to be a subcontractor, can a specification for power supplies and card readers be supplied that work with the existing access control system? That way we can verify that quotes received meet the intent of the project."*

Response: The existing access control system is a Millennium system. New access control devices shall be compatible with the existing system.

Question: *"Please identify any sequencing of door replacement work that will be required as to not impede or interfere with hospital operations."*

Response: Sequencing to be coordinated with Owner during pre-construction conference.

Question: *"Please confirm if corridors are to remain accessible at all times throughout construction."*

Response: Exit paths to remain accessible during construction to be coordinated during pre-construction and phasing meeting.

Question: *"Is contractor required to maintain existing fire barriers shown on life safety plans throughout removal and replacement of scheduled openings."*

Response: Scope of work to be completed to minimize disturbance to fire barriers as far as practical.

Question: *"What will be the accessibility expectation for frequently used areas such as BG Loading 1116, BG Trash 1117, Med Waste Storage 1115, 1114A and Trash Sanipac 1114."*

Response: Access during construction to be coordinated with Owner.

Question: *"Please confirm if general contractor is expected to provide full-time onsite supervision at all times work is being performed under the scope of this project."*

Response: See specifications for Project Management and Coordination.

Question: *"Any temporary closure or security requirements during replacement of exterior openings?"*

Response: All work to be coordinated with Owner during construction to maintain campus security.

Question: *"Does negative air pressure that is part of infection control need to be ducted outside of building or is air scrubbing through MERV 13 filter media and pumping back into construction zone acceptable?"*

Response: ICRA requirements to be coordinated during construction per specifications.

Question: *"For adjacent finishes found next to known locations of Hazardous materials what will expected from the contractor for final finish. (i.e. with hazardous abatement limited to quantities provided, how is contractor to tape, sand and finish adjacent walls not scheduled for removal without generating additional hazmat)"*

Response: The GWB will be removed back to the center of the first framing member that is at least 6" away. The GC can mud the new seam (the gypsum board does not contain asbestos, just the joints) and paint the wall with no issues.

Question: *"Please identify any approved equals to 'AEP Span' flush panel mtl siding if already known or applicable."*

Response: Submittals for all products to be reviewed during construction.

Question: *"What is existing thickness of lead lining located at x-ray rooms."*

Response: Thickness may vary, site verify.

Question: *"Any known utilities running in concrete to be anticipated or scanned for prior to securing structural support to bottom of deck (Re: 1/A902)"*

Response: No utilities are anticipated in areas of attachment to bottom of deck. All existing conditions should be verified.

Question: *"Drawing HAZ402 for the first floor is the only drawing indicating HAZMAT or asbestos. Is this the only drawing depicting asbestos or lead on the project? Should the contractor assume any asbestos materials on any of the other floors associated with the new work?"*

Response: Assume non-ACM in other areas.

Question: *"A002 - Door and Relite Schedule: There are several openings on the schedule that do not call out a hardware group. Please provide guidance to either salvage and reinstall existing hardware or provide a hardware schedule for openings: 2208C, 2303 and 2700A."*

Response: See Drawing Item No. 3 in this Addendum.

Question: *"Powering new doors on the first and second floors will require extended lengths of concealed raceways. The plans do not include a reflective ceiling plan delineating areas with hard lids or drop ceilings. The labor cost to install concealed raceways will differ dramatically between the two ceiling types. Could CBJ provide a reflective ceiling plan for the first and second floors?"*

Response: Contractor to verify all existing conditions and coordinate with existing finishes. The majority of the corridor ceilings are ACP ceiling systems with GWB ceiling at Corridor 2208.

Question: *"HAZ402 encompasses an area between grid lines 1-10 and A-I on the first floor. Should the contractor expect asbestos abatement when installing concealed raceways on the first floor outside the HAZ402 footprint? Specifically, above the drop ceiling or hard lids?"*

Response: There are no hazardous materials issues with drilling into concrete (aside from the OSHA Regs regarding particulates and crystalline silica, which require no special certification). The only concern would be to have the drilling done within an ICRA enclosure to control dust.
Placing fasteners into the gypsum walls is also considered non-hazardous work as long as the fasteners are inserted without withdrawal.

Question: *"I do not see a cable specification or schedule to get an idea of what cables are to be installed between all access control devices. Can this be provided?"*

Response: Coordinate the extension of the existing building-wide access control system with a security integrator subcontractor who is licensed to service the existing system. The control cable types shall be compatible with the existing system and shall comply with code, but are otherwise not specified.

Question: *"Detail 1 on sheet E100 indicates that we are to install a 3/4" raceway between new door controllers and the nearest cable tray. I presume this to be for the installation of network cabling to the door controller but there is no indication of where the network cabling is to be pulled from. Can the cable origination for each door controller be provided so we can account for all network cable installations?"*

Response: Per note 5 of Detail 1 on sheet E100, the existing access control system shall be extended to the new access control devices. Coordinate the extension of the existing building-wide access control system with a security integrator subcontractor who is licensed to service the existing system.

Question: *"There are several devices represented on the electrical drawings but not shown in the hardware sets for example:*

- *Door 2208A is a hardware set 7 that doesn't call for any electrical accessories. This door is denoted with a sheet note of 7 which calls for a card reader to be provided. The electrical drawings call for 2ea. door operators, 2ea. push buttons, 2ea. card readers, & 1ea. door controller. Which installation is accurate?*
- *That is one of many discrepancies found. I found discrepancies with the following doors: § 2208B; § 1400A; § 1300D; § 2208A; § 2700D; § 2700F; § 2302; § 1114A; § 2700A; § 2208C*
- *Can hardware sets be verified for complete installations when compared to the architectural and electrical drawings?"*

Response: Sheet A403, Door 2700B: Coordinate the disconnecting and reconnecting of existing access control devices associated with the replacement of this door.
The door hardware for all other doors has been verified. Provide access control devices per the electrical contract documents.

Question: *"Detail 1, sheet E200 & detail 3, sheet E201 both show new smoke detectors. Where is the preferred point of connection for these smoke detectors?"*

Response: Sheet E200, Detail 1: The addressable circuit for the new smoke detector may be intercepted at the existing smoke detector shown on this detail. Coordinate the extension of the existing fire alarm system with a fire alarm subcontractor who is licensed to service the existing system.
Sheet E201, Detail 3: The addressable circuit for the new smoke detector may be intercepted at one of the (2EA) existing smoke detectors in Corridor 2208. Coordinate the extension of the existing fire alarm system with a fire alarm subcontractor who is licensed to service the existing system.

Question: *"When adding smoke detectors to the system, will there be testing required for the overall fire alarm system due to circuit adjustment?"*

Response: The existing fire alarm system shall be tested and verified as required by code. Coordinate the testing and verification of the existing fire alarm system with a fire alarm subcontractor who is licensed to service the existing system.

Question: *"If testing is required, can these tests be performed during normal business hours?"*

Response: Testing period to be coordinated with Owner.

Question: *"There are several ADA push buttons throughout the project, but I cannot find a specification for these devices. Looking at the automatic door operators it looks like they have several options, some wired and some not. Can the desired push button be clarified so that all wiring necessary can be accounted for?"*

Response: Coordinate the circuiting and the model of the ADA push buttons with the door operator model.

Question: *"Sheet note 6, sheet A402 tells us to relocate the card reader from the jamb to the adjacent wall. General note 10 on sheet HAZ402 states that door ST01 is in a concrete wall. Will relocating this card reader be a surface mount, exterior installation or will cutting and patching of concrete be necessary? Can a location be provided for this card reader?"*

Response: Per note 6 of sheet A402, only the double doors are required to have their respective card readers relocated. Doors ST01 is a single door and is not presently equipped with a card reader.

PROJECT MANUAL:

Item No. 1 SECTION 028213 ASBESTOS ABATEMENT, Section1, Article 1.2, Paragraph D

Delete Subparagraph 1 in its entirety and ***replace*** it with the following subparagraph: "Remove and dispose of nine (9) single doors and ten (10) double doors with associated frames at a total of ten locations on the first floor of BRH, as shown on drawing HAZ402. At each door frame, completely remove and dispose of all plaster originating from the door frame (of whatever nature) from surrounding framing and surfaces, leaving the area clean for following trades."

Item No. 2 SECTION 087100 DOOR HARDWARE

Replace in its entirety with attached revised version.

DRAWINGS:

Item No. 3 Sheet A002, DOOR SCHEDULE

Add the following at Opening 2208C; HW Set "23".

Add the following at Opening 2303, HW Set "11.1".

Add the following at Opening 2700A, HW Set "5.1".

Door 2208B, ***change*** Glass Rating to "GL-3" from "GL-2".

Item No. 4 Sheet A002, DOOR SCHEDULE NOTES:

Add "CONTRACTOR TO FIELD VERIFY EA DOOR LOCATION INCLUDING HARDWARE TO BE SALVAGED WITH HARDWARE DISTRIBUTOR REPRESENTATIVE FOR COORDINATION".

Item No. 5 Sheet A401, RENOVATION NOTE 1

Add "Provide mag holds at ea door. Coord with electrical".

Item No. 6 Sheet E201, DETAIL 3

Delete the (2EA) door operators and the (2EA) ADA push buttons.

By: _____

Caleb Comas,
Contract Administrator

Total number of pages contained within this Addendum: 39

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. 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. Automatic operators.
4. 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”.
3. Division 08 Section “Automatic Door Operators”.

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. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
8. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

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 Procedures.

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. Automatic Operator Supplier Qualifications: Power operator products and accessories are required to be supplied and installed through current members of the manufacturer's "Power Operator Preferred Installer" program. Suppliers are to be factory trained, certified, and a direct purchaser of the specified power operators and be responsible for the installation and maintenance of the units and accessories indicated for the Project.

E. 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.

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

G. 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.

H. 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 procedures

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. Ten years for extra heavy duty cylindrical (bored) locks and latches.
3. Five years for exit hardware.
4. Ten years for manual overhead door closer bodies.
5. Twenty five years for manual overhead door closer bodies.
6. Five years for motorized electric latch retraction exit devices.
7. Two years for electromechanical door hardware, unless noted otherwise.

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: With the exception of electric through wire hinges, 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. Bommer Industries (BO).
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).

B. Pin and Barrel Continuous Hinges: ANSI/BHMA A156.26 Grade 1-600 certified pin and barrel continuous hinges with minimum 14 gauge Type 304 stainless steel hinge leaves, concealed stainless pin, and twin self-lubricated nylon bearings at each knuckle separation. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:

a. Markar Products; ASSA ABLOY Architectural Door Accessories (MR).
b. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC (# wires) Option.

B. 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. Provide one each of the following tools as part of the base bid contract:

a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC-C Series.

C. Provide mortar guard enclosure on steel frames installed at masonry openings for each electrical hinge specified.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Manufacturers:

a. Door Controls International (DC).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

a. Door Controls International (DC).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

C. 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. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

5. Manufacturers:

a. Hiawatha, Inc. (HI).
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.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

1. Manufacturers:

a. Corbin Russwin Hardware (RU).
b. No Substitution.

C. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. 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.
6. Keyway: Match Facility Standard.

D. Removable Cores: Provide removable cores as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.

E. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

F. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Three (3).
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

G. Construction Keying: Provide construction master keyed cylinders.

H. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

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

1. Mortise locks to be certified Security Grade 1.

2. Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.13 requirements to 13 million cycles or greater.

3. Manufacturers:

a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. No Substitution.

2.7 AUXILIARY LOCKS

A. Cylindrical Deadlocks: ANSI/BHMA A156.36 Grade 1 Certified Products Directory (CPD) listed deadlocks to fit standard ANSI 161 preparation and 1 3/8" to 1 3/4" thickness doors. Provide tapered collars to resist vandalism and 1" throw solid steel bolt with hardened steel

roller pins. Deadlocks to be products of the same source manufacturer and keyway as other locksets.

1. Manufacturers:

    a. Corbin Russwin Hardware (RU) - DL3000 Series.
    b. No Substitution.

B. Push-Pull Latches, Paddle Type, Mortise: ANSI/BHMA A156.13, Series 1000, Operational and Security Grade 1 Certified Products Directory (CPD) listed mortise type push-pull locks and latches with ligature-resistant paddle trim capable of being mounted in vertical (up or down) and horizontal (sideways) positions. Locksets to be manufactured with a corrosion resistant, formed steel case and be non-handed, field-reversible for re-handing without disassembly of the lock body. Paddles and covers are manufactured from cast stainless steel or brass material. Provide optional lead-lining (lock body) and Torx® fasteners as specified in Hardware Sets.

1. Manufacturers:

    a. Corbin Russwin Hardware (RU) - ML2000 HPSK Series.
    b. No Substitution.

2.8 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.

2.9 ELECTRIC STRIKES

A. Standard Electric Strikes: Electric strikes tested to ANSI/BHMA A156.31, Grade 1, for use on non-rated or fire rated openings. Strikes shall be of stainless steel construction tested to a minimum of 1500 pounds of static strength and 70 foot-pounds of dynamic strength with a minimum endurance of 1 million operating cycles. Provide strikes with 12 or 24 VDC

capability, fail-secure unless otherwise specified. Where specified provide latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Manufacturers:

    a. HES (HS) - 1500/1600 Series.

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: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed 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. No Substitution.

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. Same as exit device manufacturer.

2.11 ELECTROMECHANICAL EXIT DEVICES

A. Electromechanical Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices subject to same compliance standards and requirements as mechanical exit devices. Electrified exit devices to be of type and design as specified below and in the hardware sets.

1. Where conventional power supplies are not sufficient, include any specific controllers required to provide the proper inrush current.

2. Manufacturers:

a. Corbin Russwin Hardware (RU) - ED5000 Series.
b. No Substitution.

2.12 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.

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. 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 Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.

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

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

6. 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 (Cam Action): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, high efficiency 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 of the cam and roller design, one piece cast aluminum silicon alloy body with adjustable backcheck and independently controlled valves for closing sweep and latch speed.

1. Manufacturers:

a. Norton Door Controls (NO) - 2800ST Series.

C. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade 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, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:

a. Norton Door Controls (NO) - 8500 Series.

2.13 ELECTROHYDRAULIC DOOR OPERATORS

A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Standard: Certified ANSI/BHMA A156.19.

C. Performance Requirements:

1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.

E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.

F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

I. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Norton Door Controls (NO) - 6000 Series.

2.14 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Manufacturers:

a. Rixson (RF) - 980/990 Series.

b. Sargent Manufacturing (SA) - 1560 Series.

2.15 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. Hiawatha, Inc. (HI).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

2.16 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. Hiawatha, Inc. (HI).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed 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. Rixson Door Controls (RF).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Sargent Manufacturing (SA).

2.17 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. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
2. Reese Enterprises, Inc. (RE).

2.18 ELECTRONIC ACCESSORIES

A. Exit Delay Locking Systems: Exit delay locking systems are fully integrated units consisting of a minimum 1200 pound holding force magnetic lock, movement initiating device, reset bypass switch, and exit delay timer module. Unit to include an adjustable initiation gap allowing door travel of up to 1 inch before going into alarm condition. Operates on either 12VDC or 24VDC.

1. Manufacturers:

a. Security Door Controls (SD) - 101 Exit Check Series.
b. Securitron (SU) - iMXD Series.

B. Touchless Switches: FCC certified microwave sensing switch used for REX or activation of various access control devices in place of a traditional wired switch. Unit to have an adjustable sensing zone from 4" to 24". At exterior locations furnish foam gaskets and weather covers. Provide single gang or double gang unit as specified in the hardware sets.

1. Provide battery powered switches with optional DC power.

2. Manufacturers:

a. Alarm Controls (AK) - NTB Series.
b. Norton Door Controls (NO) - 700 Series.
c. Securitron (SU) - WSS Series.

C. Switching Power Supplies: Provide power supplies with either single or dual voltage configurations at 12 or 24VDC. Power supplies shall have battery backup function with an integrated battery charging circuit and shall provide capability for power distribution, direct lock control and Fire Alarm Interface (FAI) through add on modules. Power supplies shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs.

1. Manufacturers:

a. Securitron (SU) - AQD Series.
b. Altronix (AS) - Maximal 3.

2.19 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.

2.20 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 (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
2. Submit documentation of incomplete items in the following formats:

    a. PDF electronic file.
    b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

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 based on drawings dated 10/22/2021. 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.

1. Quantities listed are for each pair of doors, or for each single door.

2. The supplier is responsible for handing and sizing all products.

3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. MR - Markar
3. RO - Rockwood
4. RU - Corbin Russwin
5. SU - Securitron
6. OT - Other
7. HS - HES
8. RF - Rixson
9. NO - Norton
10. PE - Pemko

Hardware Sets

Set: 1.0

Doors: ST 01

3	Hinge, Full Mortise, Hvy Wt	T4A3386 (x NRP @ out-swing doors w/locks)	US32D	MK
1	Rim Exit Device, Less Trim	ED5200 M110 less trim	630	RU
1	Integrated Card Reader Trim	To be salvaged and reused		OT
1	Permanent Core	CR8000EMK	626	RU
1	Surface Closer	PR8301	689	NO
1	Armor Plate	K1050 34" high BEV CSK	US32D	RO
1	Door Stop	466-RKW or OH stop where floor stop presents tripping hazard	Black	RO
1	Threshold	Per detail x FHSL14		PE
1	Rain Guard	346C x full frame width, omit @ overhangs		PE
1	Gasketing	S44D Width x Height		PE

Notes: Field verify salvaged hardware to be reused for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

Set: 2.0

Doors: 2208B

5	Hinge, Full Mortise, Hvy Wt	T4A3386 (x NRP @ out-swing doors w/locks)	US32D	MK
1	Hinge, Full Mortise, Hvy Wt	T4A3386-QC	US32D	MK
1	Keyed Removable Mullion	CR910KM CT6B		RU
1	Rated Rim Exit Device, Nightlatch	ED5200A K157ET x 6P M110 M92 MELR CT6B	630	RU
1	Rated Rim Exit Device, Exit Only	ED5200A EO	630	RU
2	Permanent Core	CR8000EMK	626	RU
2	Pull	P12 (verify standard pulls with facility)	630	RU
1	Surface Closer	PR8301	689	NO
1	Auto Operator	To be salvaged and reused		OT
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO
2	Door Stop	466-RKW or OH stop where floor stop presents tripping hazard	Black	RO
1	Threshold	Per detail x FHSL14		PE

1 Gasketing	S44D Width x Height		PE
1 Mullion Gasketing	5110BL		PE
2 Ext. Sweep	3452CNB		PE
1 Card Reader	To be salvaged and reused		OT

Notes: Field verify remainder of existing hardware for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

Set: 3.0

Doors: 1114B

1 Continuous Hinge	FM300 HT Security Studs	630	MR
1 Storeroom Lock	ML2057 HPSK CT6B	630	RU
1 Permanent Core	CR8000EMK	626	RU
1 Surface Closer	PR8301	689	NO
1 Armor Plate	K1050 34" high BEV CSK	US32D	RO
1 Door Stop	466-RKW or OH stop where floor stop presents tripping hazard	Black	RO
1 Threshold	Per detail x FHSL14		PE
1 Rain Guard	346C x full frame width, omit @ overhangs		PE
1 Gasketing	S44D Width x Height		PE
1 Ext. Sweep	3452CNB		PE

Set: 4.0

Doors: 1400A

6 Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK
2 Magnetic Lock	iMXDa		SU
2 Rim Exit Device, Exit Only	ED5200 EO	630	RU
2 Surface Closer	2800ST	689	NO
2 Kick Plate	K1050 10" high BEV CSK	US32D	RO
2 Electromagnetic Holder	990 Series, per detail	689	RF
2 Card Reader	By Security Integrator		OT
1 Power Supply	AQ series x amperage req'd		SU

Notes: Door normally held open. Upon activation of fire alarm, doors close and mag locks engage. Delayed egress allowed after 15 seconds with alarm. Valid card read temporarily disarms mag lock. Upon loss of power, door is unlocked for egress.

Set: 5.0

Doors: 1300D

4	Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK	
2	Electric Hinge, Hvy Wt	T4A3786-QC	US26D	MK	☐
2	Magnetic Lock	iMXDa		SU	☐
2	Rated CVR Exit Device, Exit Only	ED5800A EO M110 M92 MELR	630	RU	☐
2	Automatic Opener	6000 series	689	NO	☐
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
2	Wall Stop	400	US26D	RO	
1	Gasketing	S44D Width x Height		PE	
1	Adhesive Astragal	S772BL		PE	
2	Frame Harness	QC-C1500		MK	☐
2	Door Harness	QC-C__ (as required)		MK	☐
2	Card Reader	By Security Integrator		OT	

Notes: Coordination required for door operator, mag lock and card access use. Coordinate requirements with operator supplier.

Power supply included with auto operator - confirm total amperage of opening prior to ordering.

Set: 5.1

Doors: 2700A

4	Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK	
2	Electric Hinge, Hvy Wt	T4A3786-QC	US26D	MK	☐
1	Magnetic Lock	iMXDa		SU	☐
1	Rated CVR Exit Device, Exit Only	ED5800A EO M110 M92 MELR	630	RU	☐
1	Rated CVR Exit Device, Storeroom	ED5800A L959ET M110 M92 MELR	630	RU	☐
1	Automatic Opener	D6021-36 (verify orientation)	689	NO	☐
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
2	Wall Stop	400	US26D	RO	
1	Gasketing	S44D Width x Height		PE	
1	Adhesive Astragal	S772BL		PE	
2	Frame Harness	QC-C1500		MK	☐
2	Door Harness	QC-C__ (as required)		MK	☐
2	Card Reader	To be salvaged and reused		OT	

Notes: Coordination required for door operator, mag lock and card access use. Coordinate requirements

with operator supplier.

Power supply included with auto operator - confirm total amperage of opening prior to ordering.

Set: 6.0

Doors: 2208

1	Continuous Hinge	FM300 HT Security Studs	630	MR
1	Rated Rim Exit Device, Exit Only	ED5200A EO	630	RU
1	Surface Closer	8301	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Wall Stop	400	US26D	RO
1	Gasketing	S44D Width x Height		PE

Set: 7.0

Doors: 2208A

5	Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Electric Hinge, Hvy Wt	T4A3786-QC	US26D	MK
1	Rated CVR Exit Device, Storeroom	ED5800A L959ET M110 M92 MELR	630	RU
1	Rated CVR Exit Device, Exit Only	ED5800A EO	630	RU
2	Concealed OH Stop, HD	1-X36	630	RF
2	Surface Closer	8301	689	NO
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Gasketing	S44D Width x Height		PE
1	Frame Harness	QC-C1500		MK
1	Door Harness	QC-C__ (as required)		MK
1	Card Reader	By Security Integrator		OT
1	Power Supply	AQ series x amperage req'd		SU

Set: 8.0

Doors: 2700D, 2700F

4	Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK
2	Electric Hinge, Hvy Wt	T4A3786-QC	US26D	MK
1	Magnetic Lock	iMXDa		SU
2	Concealed Vert Rod Exit, Exit Only	ED5800 EO M55 M110 M92 MELR	630	RU
2	Push Plate	70E (verify size of existing plate)	US32D	RO
2	Automatic Opener	D6021-36 (verify orientation)	689	NO

1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
2	Wall Stop	400	US26D	RO
1	Gasketing	S44D Width x Height		PE
2	Split Astragal	29310CS		PE
2	Card Reader	To be salvaged and reused		OT

Notes: Door normally closed and secure. Valid card read temporarily disarms mag lock. Delayed egress allowed after 15 seconds with alarm. Upon loss of power or activation of fire alarm, door is unlocked for egress.

Power supply included with auto operator - confirm total amperage of opening prior to ordering.

Set: 9.0

Doors: 1116

6	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
2	Auto Flush Bolt w/Fire Bolt - Metal door	2848	US32D	RO
2	Dust Proof Strike	570	US26D	RO
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
2	Permanent Core	CR8000EMK	626	RU
1	Coordinator	2600 x FB x Mtg Brkts	US28	RO
2	Surface Closer	8301	689	NO
2	Armor Plate	K1050 34" high BEV CSK	US32D	RO
2	Wall Stop	400	US26D	RO
2	Electromagnetic Holder	990 Series, per detail	689	RF
1	Gasketing	S44D Width x Height		PE
1	Overlapping Astragal	357C		PE

Set: 10.0

Doors: 2302

1	Continuous Hinge, Lead Lined	FM300 7'0 HT LL Security Studs	630	MR
1	Continuous Hinge, Lead Lined	FM300 7'0 HT LL EL-CEPTx32D Security Studs	630	MR
1	Auto Flush Bolt w/Fire Bolt - Metal door	2848	US32D	RO
1	Classroom Lock, Lead Lined	ML2055 HPSK M29 CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Electric Strike	1500C	630	HS

2	Concealed OH Stop, HD	1-X36	630	RF
1	Automatic Opener	D6021-36 (verify orientation)	689	NO
4	Armor Plate, Adhesive	K1050 34" high BEV CSK SA	US32D	RO
1	Gasketing	S44D Width x Height		PE
2	Split Astragal	29310CS		PE
1	Frame Harness	QC-C1500		MK
1	Door Harness	QC-C__ (as required)		MK
2	Wave Actuator	700		NO
1	Power Supply	AQ series x amperage req'd		SU

Notes: Coordinate installation of electric strike with location of lead lining in door.

Set: 11.0

Doors: 2303A

3	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Passage Latch	ML2010 HPSK	630	RU
1	Deadbolt	DL3217 CT6B	626	RU
1	Permanent Core	CR8000EMK	626	RU
1	Concealed OH Stop, HD	1-X36	630	RF
1	Surface Closer, Delayed Action	8301 DA	689	NO
1	Mop Plate	K1050 6" high BEV CSK	US32D	RO
1	Armor Plate	K1050 34" high BEV CSK	US32D	RO
1	Gasketing	S44D Width x Height		PE

Set: 11.1

Doors: 2301, 2303

1	Continuous Hinge, Lead Lined	FM300 7'0 HT LL Security Studs	630	MR
1	Classroom Lock, Lead Lined	ML2055 HPSK M29 CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Electric Strike	1600-CS	630	HS
1	Concealed OH Stop, HD	1-X36	630	RF
1	Automatic Opener	6000 series	689	NO
1	Armor Plate, Adhesive	K1050 34" high BEV CSK SA	US32D	RO
1	Gasketing	S44D Width x Height		PE
1	Frame Harness	QC-C1500		MK
2	Wave Actuator	700		NO
1	Power Supply	AQ series x amperage req'd		SU

Set: 12.0

Doors: 2315

6	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Self latching Flush Bolt set - Metal door	2845	US26D	RO
1	Dust Proof Strike	570	US26D	RO
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Coordinator	2600 x FB x Mtg Brkts	US28	RO
2	Concealed OH Stop, HD	1-X36	630	RF
2	Surface Closer, Delayed Action	8301 DA	689	NO
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Gasketing	S44D Width x Height		PE

Set: 13.0

Doors: 2434

1	Continuous Hinge	FM300 HT Security Studs	630	MR
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Concealed OH Stop, HD	1-X36	630	RF
1	Surface Closer	8301	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Gasketing	S44D Width x Height		PE

Set: 14.0

Doors: 2816

1	Continuous Hinge	FM300 HT Security Studs	630	MR
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Surface Closer, Delayed Action	8301 DA	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Wall Stop	400	US26D	RO
1	Gasketing	S44D Width x Height		PE

Set: 15.0

Doors: 1117, 2425

3	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Surface Closer	8301	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Wall Stop	400	US26D	RO
1	Gasketing	S44D Width x Height		PE

Set: 16.0

Doors: 1113, 1123E

3	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Storeroom Lock	ML2057 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
1	Concealed OH Stop, HD	1-X36	630	RF
1	Surface Closer	8301	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Gasketing	S44D Width x Height		PE

Set: 17.0

Doors: 2620

6	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Self latching Flush Bolt set - Metal door	2845	US26D	RO
1	Dust Proof Strike	570	US26D	RO
1	Office Lock	ML2051 HPSK CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
2	Surface Closer	8301	689	NO
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO
2	Wall Stop	400	US26D	RO
2	Electromagnetic Holder	Existing to Remain		OT
1	Gasketing	S44D Width x Height		PE
2	Split Astragal	29310CS		PE

Notes: Field verify remainder of existing hardware for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

Set: 18.0

Doors: 1314, 1314B

1	Continuous Hinge, Lead Lined	FM300 7'0 HT LL Security Studs	630	MR
1	Office Lock, Lead Lined	ML2051 HPSK M29 CT6B	630	RU
1	Permanent Core	CR8000EMK	626	RU
2	Surf Overhead Stop	10-x36	689	RF
1	Surface Closer	R 8501 DA	689	NO
1	Kick Plate, Adhesive	K1050 10" high BEV CSK SA	US32D	RO
1	Gasketing	S44D Width x Height		PE

Set: 19.0

Doors: 1114A, 2314

3	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Passage Latch	ML2010 HPSK	630	RU
1	Surface Closer	8301	689	NO
1	Armor Plate	K1050 34" high BEV CSK	US32D	RO
1	Electromagnetic Holder	990 Series, per detail	689	RF
1	Gasketing	S44D Width x Height		PE

Notes: Tie electromagnetic holder to fire alarm system.

Set: 20.0

Doors: 1114, 1115

3	Hinge, Full Mortise	TA2714 (x NRP @ out-swing doors w/locks)	US26D	MK
1	Integrated Card Reader Lock	To be salvaged and reused		OT
1	Permanent Core	CR8000EMK	626	RU
1	Surface Closer	8301	689	NO
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO
1	Electromagnetic Holder	990 Series, per detail	689	RF
1	Gasketing	S44D Width x Height		PE

Notes: Field verify salvaged hardware to be reused for compliance with new components. Provide filler

plates where removal of existing hardware leaves holes in door or frame.

Set: 21.0

Doors: 2700B

6	Hinge, Full Mortise, Hvy Wt	T4A3786 (x NRP @ out-swing doors w/locks)	US26D	MK
2	Magnetic Lock	iMXDa		SU
2	Concealed Vert Rod Exit, Exit Only	ED5800 EO M55 M110 M92 MELR	630	RU
2	Push Plate	70E (verify size of existing plate)	US32D	RO
2	Surface Closer	2800ST	689	NO
2	Kick Plate	K1050 10" high BEV CSK	US32D	RO
2	Electromagnetic Holder	Existing to Remain		OT
1	Gasketing	S44D Width x Height		PE
2	Split Astragal	29310CS		PE
1	Card Reader	To be salvaged and reused		OT

Notes: Door closed and secure when not on hold-opens. Valid card read temporarily disarms mag lock. Delayed egress allowed after 15 seconds with alarm. Upon loss of power or activation of fire alarm, door is unlocked for egress.

Field verify remainder of existing hardware for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

Set: 22.0

Doors: 3122, 3128

1	All Hardware	To be salvaged and reused	OT

Notes: Field verify remainder of existing hardware for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

Set: 23.0

Doors: 2208C

1	Card Reader	By Security Integrator	OT
1	Power Supply	AQ series x amperage req'd	SU
1	All Hardware	To be salvaged and reused	OT

Notes: Field verify remainder of existing hardware for compliance with new components. Provide filler plates where removal of existing hardware leaves holes in door or frame.

END OF SECTION 087100