## ADDENDUM

**PAGE 1 OF 2**

### OWNER:
Michigan Technological University  
1400 Townsend Drive, Houghton, MI 49931

### ENGINEER:
Fishbeck, Thompson, Carr & Huber, Inc.  
1515 Arboretum Drive, SE  
Grand Rapids, MI 49546

### DRAWING REVISION NO.:
A2

### SPECS TO BE DELETED:
08 11 16

### ISSUED HEREWITH:

<table>
<thead>
<tr>
<th>SPECIFICATION SECTIONS:</th>
<th>Pre-Bid Walk-Through Sign-In Sheet, A201, P001, P101, M301, M904, E202</th>
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<tr>
<td>SHEETS:</td>
<td>Pre-Bid Walk-Through Sign-In Sheet, A201, P001, P101, M301, M904, E202</td>
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### BIDS DUE:
Tuesday, May 23, 2017 at 3 p.m.

This Addendum is issued to all Bid Set Holders, is a part of the Contract Documents, and modifies the previously issued Bidding Documents. Acknowledge receipt of this Addendum in the space provided on the Bid form; failure to do so may result in rejection of the Bid.

### ITEM NO. 1:
Clarifications:
A. The Pre-Bid Walk-Through Sign-In Sheet for the mandatory Walk-Through meeting is attached.  
B. Questions related to the Bids and Bidding Documents shall be provided to Michigan Tech or FTCH by end of the business day on Thursday May 18.

### ITEM NO. 2:
Section(s): 04 20 00 – Unit Masonry (Not Reissued):
A. Delete paragraph 1.7. Mock-up is not required.

### ITEM NO. 3:
Section(s): 07 53 23 – EPDM thermoset Single-Ply Roofing (Not Reissued):
A. Add paragraph 2.1 A. 3 as follows: Versico Roofing Systems; Versigard EPDM; [www.versico.com](http://www.versico.com).

### ITEM NO. 4:
Section(s): 08 11 13 – Hollow Metal Doors and Frames (Reissued):
A. Add exterior hollow metal doors and frames: Add paragraphs 1.1.E, 2.3.D (including sub-paragraphs) and 2.4.K (including sub-paragraphs).

### ITEM NO. 5:
Section(s): 08 11 16 – Aluminum Doors and Frames (To be Deleted)
A. Delete this section in its entirety.

### ITEM NO. 6:
Section(s): 08 71 00 – Door Hardware (Reissued):
A. Hardware Set 2.0: Add Weatherstrip. Change to standard hinges.  
B. Hardware Set 3.0: Change Door Closer part number.  
C. Hardware Set 5.0: Change to continuous hinges.  
D. Hardware Set 11.0: Add Weatherstrip. Change continuous hinge part number.
ITEM NO. 7:
Section(s): 27 15 00 – Communications Horizontal Cabling (Not Reissued):
A. For clarification, provide patch panels as previously specified in paragraph 2.3.E:
1. 48-port Patch Panel 1375292-1 (need one of these for every 12 4-port network locations.)
2. 24-port Patch Panel 1933307-1 (need one of these for every 12 2-port network locations.)
B. For clarification, the Contractor shall terminate data wiring at all data outlets and in the Communications Closet in the Sub-Basement. Provide new patch panels and coordinate mounting in the Communications Closer with MTU. Test all outlets and wiring to Category 6 requirements and provide test results to MTU as indicated in paragraph 3.7.

ITEM NO. 8:
Sheet: A101 - Basement & Sub-Basement Floor Plans (Not Reissued)
A. Add corner guard to pipe enclosure in B023 Inside Receiving.
B. At Keynote #19, remove reference to handrails.

ITEM NO. 9:
Sheet: A201 - Interior Elevations, room finish Schedule, Door Schedule (Reissued):
A. Door Schedule: Change doors B013B, B017B and B021 to Hollow Metal with painted finish.
B. Change details 12 and 13 to indicate hollow metal doors and frames.
C. Room Finish Schedule:
   1. Base in S006 Lab shall be on new wall only.
   2. Add paint to North, East, and South walls of B007 Elevator lobby.
   3. Remove paint finish from east and south walls of B002 Open. West wall to receive paint at CMU infill only.
   4. Change dimension for frame Type 2 to accommodate 4’-0” door panel.

ITEM NO. 10:
Sheet: P001 – Plumbing General Notes and Legend (Reissued)
A. Add Domestic Water Backflow Prevention Detail.

ITEM NO. 11:
Sheet: P101 – Basement Plumbing Enlarged Plans (Reissued)
A. Supply Piping Plan: Add exterior wall hydrants near each exit door.
B. Supply Piping Plan: Changed CA piping layout.
C. Fire Protection Plan: Add new to existing piping.
D. Add fire protection Key Notes #4 and #5.

ITEM NO. 12:
Sheet: M301 – Mechanical Site Plan, Vault Plant and Sections (Reissued)
A. For Buried Steam Piping: Add existing valve sizes.

ITEM NO. 13:
Sheet: M904 – Control Diagrams (Reissued)
A. For HVAC Controls and Sequence of Operation: A clarification note has been added to coordinate with existing building controls at MTU to tie in new HVAC equipment for this project.

ITEM NO. 14:
Sheet: E002 - Schedules (Not Reissued)
A. For clarification, provide standard data outlet with 2 data drops at all camera and wireless device locations.

ITEM NO. 15:
Sheet: E202 – Basement Power and Systems Plan (Reissued)
A. Add security camera in B016 as indicated.

END OF ADDENDUM
<table>
<thead>
<tr>
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SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES

PART 1  GENERAL

1.1  SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.
B. Fire-rated hollow metal doors and frames.
C. Hollow metal borrowed lites glazing frames.
D. Accessories, including glazing.
E. Thermally insulated hollow metal doors with frames.

1.2  ABBREVIATIONS AND ACRONYMS

B. HMMA - Hollow Metal Manufacturers Association.
C. NAAMM - National Association of Architectural Metal Manufacturers.
E. SDI - Steel Door Institute.
F. UL - Underwriters Laboratories.

1.3  REFERENCE STANDARDS

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
H. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
Michigan Technological University
Houghton, Michigan
Chemical Stores
Project Number G160551 - ADDENDUM NO. 2

J. ITS (DIR) - Directory of Listed Products; current edition.
L. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
P. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.4 SUBMITTALS
A. See Division 01 Section for Administrative Requirements for submittal procedures.
B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.5 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
B. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes installation requirements.

1.6 DELIVERY, STORAGE, AND HANDLING
A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Hollow Metal Doors and Frames:
   6. Substitutions: See Division 01 for Product Requirements.
2.2 DESIGN CRITERIA

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
   3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
   4. Door Edge Profile: Manufacturers standard for application indicated.
   5. Typical Door Face Sheets: Flush.
   7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
   8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
      a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.3 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Interior Doors, Non-Fire Rated, Thermally Insulated where indicated on drawings:
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 2 - Heavy-duty.
      b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 1 - Full Flush.
      d. Door Face Metal Thickness: 18 gage, 0.042 inch, minimum.
      e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
   2. Core Material: Vertical steel stiffeners.

C. Fire-Rated Doors:
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 2 - Heavy-duty.
      b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 1 - Full Flush.
      d. Door Face Metal Thickness: 18 gage, 0.042 inch, minimum.
      e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
   2. Fire Rating: As indicated on drawings, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
   3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
      a. Attach fire rating label to each fire rated unit.
D. Exterior Doors: Thermally Insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 3 – Extra Heavy-duty.
   b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
   e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
2. Core Material: Polystyrene, 1 lbs/cu ft minimum density.
3. Door Thermal Resistance: R-Value of 6.0 minimum, for installed thickness of polystyrene, in accordance with ASTM C1363.
5. Weatherstripping: Refer to Division 08 Section "Door Hardware."

2.4 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
B. Frame Finish: Same as hollow metal door.
C. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
   1. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
D. Door Frames, Fire-Rated: Full profile/continuously welded type.
   1. Fire Rating: Same as door, labeled.
   2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
E. Mullions for Pairs of Doors: Removable or no mullion if not required per the hardware set specified, with profile similar to jambs.
F. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
G. Transom Bars: Fixed, of profile same as jamb and head.
H. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
I. Frames Wider than 48 Inch: Reinforce with steel channel fitted tightly into frame head, flush with top.
J. Frames Installed Back-to-Back: Reinforce with steel channels anchored to floor and overhead structure.
K. Exterior Door Frames: Full profile/continuously welded type.
   1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with coating thickness in accordance with requirements indicated.
   2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
   3. Weatherstripping, Separate, see Division 08 Section "Door Hardware."

2.5 ACCESSORIES

A. Glazing: As specified in Division 08 Section “Glazing”, factory installed.
B. Astragals for Double Doors: Specified in Division 08 Section “Door Hardware.”
C. Grout for Frames: Portland cement grout with maximum 4 inch slump for hand troweling; thinner pumpable grout is prohibited.
D. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

E. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

2.6 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.2 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.3 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Coordinate installation of hardware.

F. Coordinate installation of glazing.

G. Coordinate installation of electrical connections to electrical hardware items.

3.4 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified door and frame standards or custom guidelines indicated.

B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.5 ADJUSTING

A. Adjust for smooth and balanced door movement.
Hollow Metal Doors and Frames

Chemical Stores
Project Number G160551 - ADDENDUM NO. 2

B. Test sound control doors for force to close, latch, and unlatch; adjust as necessary in compliance with requirements.

3.6 SCHEDULE

A. As indicated on the Drawings

END OF SECTION 08 11 13
SECTION 08 71 00 – DOOR HARDWARE

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. This Section includes commercial door hardware for the following:
   1. Swinging doors.

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. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
   6. NFPA 105 - Installation of Smoke Door Assemblies.
   7. State Building Codes, Local Amendments.

D. 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 requirements for 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 for 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.

H. 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. Twenty five years for manual surface door closer bodies.
   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:

C. 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.

D. 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, Product 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 as specified in the Door Hardware Sets.
   1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
      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 Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
      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.
4. Acceptable Manufacturers:
   a. Bommer Industries (BO).
   b. Ives (IV).
   c. McKinney Products (MK).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge, with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
   1. Acceptable Manufacturers:
      a. Ives (IV).
      b. McKinney Products (MK).
      c. Pemko Manufacturing (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. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
   1. Acceptable Manufacturers:
      a. McKinney Products (MK) - QC (# wires) Option.

B. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish 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. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
   1. Acceptable Manufacturers:
      a. Pemko Manufacturing (PE) - EL-CEPT Series.
      b. Securitron (SU) - EL-CEPT Series.
      c. Von Duprin (VD) - EPT-10 Series.

C. 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:
      b. McKinney Products (MK) - Connector Hand Tool: QC-R003.
   2. Acceptable Manufacturers:
      a. McKinney Products (MK) - QC-C Series.

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. Acceptable Manufacturers:
      a. Ives (IV).
      b. Rockwood Manufacturing (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. Acceptable Manufacturers:
      a. Ives (IV).
      b. Rockwood Manufacturing (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. Acceptable Manufacturers:
      a. Stanley Best (BE).
      b. No Substitution.

C. 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.

D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
   1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

E. Keying System: Each type of lock and cylinders to be factory keyed.
   1. Conduct specified "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: Key locks to Owner's existing system.

F. Key Quantity: Provide the following minimum number of keys:
   1. Change Keys per Cylinder: Two (2)
   2. Master Keys (per Master Key Level/Group): Five (5).
   4. Construction Control Keys (where required): Two (2).
   5. Permanent Control Keys (where required): Two (2).

G. Construction Keying: Provide temporary keyed construction cores.

H. Key Registration List (Bitting List):
   1. Furnish a list of opening numbers with locking devices, showing cylinder types and quantities required when cylinders or cores are to be owner furnished.

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. Acceptable Manufacturers:
      a. Corbin Russwin Hardware (RU) - ML2000 Series.
      b. Schlage (SC) - L9000 Series.
      c. Stanley Best (BE) - 40H Series.
2.7 ELECTROMECHANICAL LOCKING DEVICES

A. Electromechanical Mortise Locksets, Grade 1 (Heavy Duty): Subject to same compliance standards and requirements as mechanical mortise locksets, electrified locksets to be of type and design as specified below.
   1. Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control, latchbolt and lock/unlock status monitoring, deadbolt monitoring, and request-to-exit signaling. Support end-of-line resistors contained within the lock case. Unless otherwise indicated, provide electrified locksets standard as fail secure.
   2. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
   3. High Security Monitoring: Provide lock bodies which have built-in request to exit monitoring and are provided with accompanying door position switches. Provide a resistor configuration which is compatible with the access control system.
   4. Acceptable Manufacturers:
      a. Corbin Russwin Hardware (RU) - ML20900 Series.

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:
   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 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. Electromechanical Options: Subject to same compliance standards and requirements as mechanical exit devices, electrified devices to be of type and design as specified in hardware sets. Include any specific controllers when conventional power supplies are not sufficient to provide the proper inrush current.
      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. Rail Sizing: Provide exit device rails factory sized for proper door width application.

10. 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 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. Acceptable Manufacturers:
   a. Von Duprin (VD) - 35A/98 XP Series.

2.10 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 (Large Body Cast Iron): 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 body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Acceptable Manufacturers:
   a. LCN Closers (LC) - 4040XP Series.

2.11 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.
   a. 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.
   b. 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.
   c. 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.
   d. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
5. Acceptable Manufacturers:
   a. Ives (IV).
   b. Rockwood Manufacturing (RO).
   c. Trimco (TC).

2.12 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. Acceptable Manufacturers:
      a. Ives (IV).
      b. Rockwood Manufacturing (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. Acceptable Manufacturers:
      a. Glynn Johnson (GJ).
      b. Rixson Door Controls (RF).
      c. Sargent Manufacturing (SA).

2.13 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.
   1. Acceptable Manufacturers:
      a. National Guard Products (NG).
      b. Pemko Manufacturing (PE).
      c. Reese Enterprises, Inc. (RE).
2.14 ELECTRONIC ACCESSORIES

A. Push-Button Switches: Industrial grade momentary or alternate contact, back-lighted push buttons with stainless-steel switch enclosures. 12/24 VDC bi-color illumination suitable for either flush or surface mounting.
   1. Acceptable Manufacturers:
      a. Securitron (SU) - PB Series.

B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
   1. Acceptable Manufacturers:
      a. Securitron (SU) - DPS Series.

C. 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. Acceptable Manufacturers:
      a. Securitron (SU) - BPS Series.

2.15 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.

2.16 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.

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:
   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 09 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 07 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. Manufacturer's Abbreviations:
1. MK - McKinney.
2. PE - Pemko.
3. RO - Rockwood.
4. RU - Corbin Russwin.
5. VD - Von Duprin.
7. RF - Rixson.
8. LC - LCN Closers.
9. SU - Securitron.

Hardware Schedule

Set: 1.0
Doors: B002B, B017A, B018B, B018C

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Manufacturer Abbreviation</th>
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<tbody>
<tr>
<td>Doors</td>
<td>All Hardware</td>
<td>BY DOOR SUPPLIER</td>
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Set: 2.0
Doors: B013B, B021

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<th>Item</th>
<th>Description</th>
<th>Manufacturer Abbreviation</th>
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<tr>
<td>3 Hinges</td>
<td>TA2314 – 4.5 x 4.5 NRP</td>
<td>US32D MK</td>
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<td>1 Rim Exit Device</td>
<td>98EO 990EO</td>
<td>US26D VD</td>
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<td>1 Concealed Overhead Stop</td>
<td>6-X36</td>
<td>630 RF</td>
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<td>1 Door Closer</td>
<td>4040XP LONG</td>
<td>AL LC</td>
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<td>1 Drop Plate</td>
<td>4040XP-18TJ (as req)</td>
<td>AL LC</td>
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<td>1 Threshold</td>
<td>279x224AFGT MSES25SS</td>
<td>PE</td>
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<td>1 Rain Guard</td>
<td>346C</td>
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<td>1 Door Bottom</td>
<td>216BDCFG</td>
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<td>1 Position Switch</td>
<td>DPS-MW-BK</td>
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<td>1 Weatherstrip</td>
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Michigan Technological University
Houghton, Michigan
Chemical Stores
Project Number G160551 - ADDENDUM NO. 2

Door Hardware
Section 08 71 00

Set: 3.0

Doors: B018A

1 Continuous Hinge CFM_SLF-HD1 PT - DOOR HEIGHT PE
1 Mortise Lock (storeroom) ML2057 NSA LC 626 RU
1 Cylinder 1E-74 Less Core (Cam/Length to suit) 626 BE
1 Electric Strike 6210 12VDC FSE DSLC US32D VD
1 Door Closer 4040XP SHCUSH AL LC
1 Door Stop 403 (or) 441CU US26D RO
1 Timer DT-7 SU
1 Power Supply BPS (size & type as req) SU

Notes: Perimeter/meeting stile seals by frame/door supplier.
Card reader by security integrator.
Electronic Operation: Valid card unlocks electric strike or key retracts latchbolt. Timer programmed to disarm card reader during specific hours to be coordinated with Owner. Request to exit shows authorized egress. Free egress at all times. In case of power loss or fire alarm, door remains unlocked and latched.

Set: 4.0

Doors: B013C

5 Hinge (heavy weight) T4A3786 US26D MK
1 Electric Hinge (heavy weight) T4A3786-QC12 US26D MK
1 Electric Strike 6210 12VDC FSE DSLC US32D VD
1 Dust Proof Strike 570 US26D RO
2 Flush Bolt (manual) 555 (or) 557 US26D RO
1 Mortise Lock (storeroom) ML2057 NSA LC 626 RU
1 Cylinder 1E-74 Less Core (Cam/Length to suit) 626 BE
1 Door Closer 4040XP SCUSH AL LC
2 Kick Plate K1050 10" 4BE CSK US32D RO
2 Silencer 608 (or) 609 GRY RO
1 Position Switch DPS-MW-BK SU
1 Push Button PB3ER SU
1 Power Supply BPS (size & type as req) SU

Notes: Card reader, intercom by security integrator.
Electronic Operation: Valid card, remote release unlocks electric strike or key retracts latchbolt. Request to exit to show authorized egress. Free egress at all times. In case of power loss, door remains locked and latched.
### Set: 5.0

Doors: B013A

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<tr>
<th>Item</th>
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<tr>
<td>2 Continuous Hinge</td>
<td>CFM-SLF-HD1 PT - DOOR HEIGHT PE</td>
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<tr>
<td>1 Concealed Vert Rod Exit</td>
<td>RX 9847EO LBR 990EO US26D VD</td>
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<td>1 Concealed Vert Rod Exit</td>
<td>RX 9847L 06 LBR E 996L FSE US26D VD</td>
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<tr>
<td>1 Cylinder</td>
<td>12E-72 Less Core 626 BE</td>
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<td>K1050 10* 4BE CSK US32D RO</td>
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<td>2 Silencer</td>
<td>608 (or) 609 GRY RO</td>
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<td>2 Frame Harness</td>
<td>QC-C1500P MK</td>
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<td>2 Door Harness</td>
<td>QC-C - LENGTH TO SUIT MK</td>
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<tr>
<td>2 Electric Power Transfer</td>
<td>EL-CEPT SU</td>
</tr>
<tr>
<td>2 Position Switch</td>
<td>DPS-MW-BK SU</td>
</tr>
<tr>
<td>1 Power Supply</td>
<td>BPS (size &amp; type as req) SU</td>
</tr>
</tbody>
</table>

Notes: Card reader by security integrator.  
Electronic Operation: Valid card unlocks outside lever or key retracts latchbolt. Request to exit shows authorized egress. Free egress at all times. In case of power loss, door remains locked and latched.

### Set: 6.0

Doors: B023

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Hinge</td>
<td>TA2714 US26D MK</td>
</tr>
<tr>
<td>1 Electric Hinge</td>
<td>TA2714-QC12 US26D MK</td>
</tr>
<tr>
<td>1 Dust Proof Strike</td>
<td>570 US26D RO</td>
</tr>
<tr>
<td>2 Flush Bolt (manual)</td>
<td>555 (or) 557 US26D RO</td>
</tr>
<tr>
<td>1 Mortise Lock (storeroom)</td>
<td>ML2057 NSA LC 626 RU</td>
</tr>
<tr>
<td>1 Electric Strike</td>
<td>6210 12VDC FSE DSLC US32D VD</td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1E-74 Less Core (Cam/Length to suit) 626 BE</td>
</tr>
<tr>
<td>1 Surface Overhead Stop</td>
<td>10-X36 630 RF</td>
</tr>
<tr>
<td>1 Door Closer</td>
<td>4040XP SCUSH AL LC</td>
</tr>
<tr>
<td>2 Kick Plate</td>
<td>K1050 10* 4BE CSK US32D RO</td>
</tr>
<tr>
<td>2 Silencer</td>
<td>608 (or) 609 GRY RO</td>
</tr>
<tr>
<td>1 Power Supply</td>
<td>BPS (size &amp; type as req) SU</td>
</tr>
</tbody>
</table>

Notes: Card reader by security integrator.  
Electronic Operation: Valid card unlocks electric strike or key retracts latchbolt. Request to exit shows authorized egress. Free egress at all times. In case of power loss, door remains locked and latched.
| Set: 7.0 |
|-------------------|---|---|
| **Doors:** B002A |
| 5 **Hinge**      | TA2714 | US26D | MK |
| 1 **Electric Hinge** | TA2714-QC12 | US26D | MK |
| 1 **Dust Proof Strike** | 570 | US26D | RO |
| 1 **Flush Bolt (automatic)** | 2842 (or) 2942 | US26D | RO |
| 1 **Mortise Lock (storeroom)** | ML2057 NSA LC | 626 | RU |
| 1 **Electric Strike** | 6210 12VDC FSE DSLC | US32D | VD |
| 1 **Cylinder**    | 1E-74 Less Core (Cam/Length to suit) | 626 | BE |
| 1 **Coordinator** | 1700 | Black | RO |
| 2 **Door Closer** | 4040XP EDA | AL | LC |
| 2 **Kick Plate**  | K1050 10" 4BE CSK | US32D | RO |
| 1 **Door Stop**   | 403 (or) 441CU | US26D | RO |
| 1 **Gasketing (head/jamb)** | S88BL | PE |
| 1 **Astragal**    | 357SP | PE |
| 1 **Astragal**    | S771C | PE |
| 1 **Power Supply** | BPS (size & type as req) | SU |

**Notes:** Card reader by security integrator.
Electronic Operation: Valid card unlocks outside lever or key retracts latchbolt. Request to exit shows authorized egress. Free egress at all times. In case of power loss, door remains locked and latched.

| Set: 8.0 |
|-------------------|---|---|
| **Doors:** B014, B016 |
| 3 **Hinge**      | TA2714 | US26D | MK |
| 1 **Mortise Lock (office)** | ML2054 NSA LC | 626 | RU |
| 1 **Cylinder**    | 1E-74 Less Core (Cam/Length to suit) | 626 | BE |
| 1 **Door Closer** | 4040XP REG | AL | LC |
| 1 **Kick Plate**  | K1050 10" 4BE CSK | US32D | RO |
| 1 **Door Stop**   | 403 (or) 441CU | US26D | RO |
| 1 **Gasketing (head/jamb)** | S88BL | PE |
## Door Hardware

### Section 08 71 00

#### Set: 9.0

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Finish Code</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Hinge</td>
<td>TA2714</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>1 Dust Proof Strike</td>
<td>570</td>
<td>US26D</td>
<td>RO</td>
</tr>
<tr>
<td>2 Flush Bolt (manual)</td>
<td>555 (or) 557</td>
<td>US26D</td>
<td>RO</td>
</tr>
<tr>
<td>1 Mortise Lock (storeroom)</td>
<td>ML2057 NSA LC</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1E-74 Less Core (Cam/Length to suit)</td>
<td>626</td>
<td>BE</td>
</tr>
<tr>
<td>1 Door Closer</td>
<td>4040XP EDA</td>
<td>AL</td>
<td>LC</td>
</tr>
<tr>
<td>2 Kick Plate</td>
<td>K1050 10&quot; 4BE CSK</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>2 Door Stop</td>
<td>403 (or) 441CU</td>
<td>US26D</td>
<td>RO</td>
</tr>
<tr>
<td>2 Silencer</td>
<td>608 (or) 609</td>
<td>GRY</td>
<td>RO</td>
</tr>
</tbody>
</table>

#### Set: 10.0

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Finish Code</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Hinge</td>
<td>TA2714</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>1 Mortise Lock (office)</td>
<td>ML2054 NSA LC</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1E-74 Less Core (Cam/Length to suit)</td>
<td>626</td>
<td>BE</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>403 (or) 441CU</td>
<td>US26D</td>
<td>RO</td>
</tr>
<tr>
<td>3 Silencer</td>
<td>608 (or) 609</td>
<td>GRY</td>
<td>RO</td>
</tr>
</tbody>
</table>

#### Set: 11.0

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Finish Code</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Continuous Hinge</td>
<td>CFM-HD1 PT - DOOR HEIGHT</td>
<td>PE</td>
<td></td>
</tr>
<tr>
<td>1 Mortise Lock (storeroom)</td>
<td>ML2057 NSA LC</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>1 Electric Strike</td>
<td>6210 12VDC FSE DSCL</td>
<td>US32D</td>
<td>VD</td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1E-74 Less Core (Cam/Length to suit)</td>
<td>626</td>
<td>BE</td>
</tr>
<tr>
<td>1 Concealed Overhead Stop</td>
<td>6-X36</td>
<td>630</td>
<td>RF</td>
</tr>
<tr>
<td>1 Door Closer</td>
<td>4040XP REG</td>
<td>AL</td>
<td>LC</td>
</tr>
<tr>
<td>1 Threshold</td>
<td>166A MSES25SS</td>
<td>PE</td>
<td></td>
</tr>
<tr>
<td>1 Sweep</td>
<td>315CN</td>
<td>PE</td>
<td></td>
</tr>
<tr>
<td>1 Timer</td>
<td>DT-7</td>
<td>SU</td>
<td></td>
</tr>
<tr>
<td>1 Power Supply</td>
<td>BPS (size &amp; type as req)</td>
<td>SU</td>
<td></td>
</tr>
<tr>
<td>1 Weatherstrip</td>
<td>S88BL</td>
<td>PE</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Perimeter/meeting stile seals by frame/door supplier. Card reader by security integrator.
Electronic Operation: Valid card unlocks electric strike or key retracts latchbolt. Timer programmed to disarm card reader during specific hours to be coordinated with Owner. Request to exit shows authorized egress. Free egress at all times. In case of power loss or fire alarm, door remains unlocked and latched.
### Set: 12.0

**Doors: S1A: Exterior - pair aluminum doors**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Model/Code</th>
<th>Finish/Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Continuous Hinge</td>
<td>CFM-SLF-HD1</td>
<td>PE</td>
</tr>
<tr>
<td>1 Exit Device</td>
<td>43 AD8410</td>
<td>US32D SA</td>
</tr>
<tr>
<td>1 Exit Device</td>
<td>43 AD8410 x 106 Aux Ctrl</td>
<td>US32D SA</td>
</tr>
<tr>
<td>1 Rim Cylinder</td>
<td>- to suit Owner's existing key system</td>
<td>BE</td>
</tr>
<tr>
<td>2 Pull</td>
<td>RM201 Mtg-Type 12XHD</td>
<td>US10BE RO</td>
</tr>
<tr>
<td>2 Concealed Overhead Stop</td>
<td>6-X36</td>
<td>630 RF</td>
</tr>
<tr>
<td>2 Drop Plate</td>
<td>9587</td>
<td>689 NO</td>
</tr>
<tr>
<td>2 Surface Closer</td>
<td>9500 x top jamb mount</td>
<td>689 NO</td>
</tr>
<tr>
<td>1 Threshold</td>
<td>1715AK MSES25SS</td>
<td>PE</td>
</tr>
<tr>
<td>1 Weatherstrip</td>
<td>- integral within construction of aluminum doors</td>
<td>00</td>
</tr>
<tr>
<td>2 Sweep</td>
<td>29326CNB TKSP8</td>
<td>PE</td>
</tr>
<tr>
<td>2 Position Switch</td>
<td>DPS-M-BK</td>
<td>SU</td>
</tr>
</tbody>
</table>

END OF SECTION 08 71 00