

## SECTION 087111

### DOOR HARDWARE

#### PART 1 - GENERAL

##### 1.1 STIPULATIONS

- A. The specifications sections "General Conditions of the Construction Contract", "Special Conditions", and "Division 1 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

##### 1.2 SUMMARY

- A. Section includes:
  - 1. Mechanical door hardware for the following:
    - a. Swinging doors.
  - 2. Electrified door hardware.

##### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Details of electrified door hardware, indicating the following:
  - 1. Wiring Diagrams: For power, signal, and control wiring and including the following:
    - a. Details of interface of electrified door hardware and building safety and security systems.
    - b. Schematic diagram of systems that interface with electrified door hardware.
    - c. Point-to-point wiring.
    - d. Risers.
    - e. Elevations doors controlled by electrified door hardware.
  - 2. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.
- C. Other Submittals:
  - 1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

- a. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
  - b. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
  - c. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
  - d. Content: Include the following information:
    - 1) Identification number, location, hand, fire rating, size, and material of each door and frame.
    - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
    - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
    - 4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
    - 5) Fastenings and other pertinent information.
    - 6) Explanation of abbreviations, symbols, and codes contained in schedule.
    - 7) Mounting locations for door hardware.
    - 8) List of related door devices specified in other Sections for each door and frame.
2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Client Agency's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.
- D. Product Certificates: For electrified door hardware, from the manufacturer.
- 1. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
- E. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- F. Warranty: Special warranty specified in this Section.
- G. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.
- 1.4 QUALITY CONTROL
- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Client Agency about door hardware and keying.
- 1. Warehousing Facilities: In Project's vicinity.
  - 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
  - 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows:
1. For door hardware, an Architectural Hardware Consultant (AHC) and Architectural Hardware Consultant (AHC) who is also an Electrified Hardware Consultant (EHC).
- C. Source Limitations: Obtain each type of door hardware from a single manufacturer.
1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- D. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.
- E. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- F. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- G. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC/ANSI A117.1.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
  2. Comply with the following maximum opening-force requirements:
    - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
    - b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
    - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
  3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
  4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.
- H. Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
  2. Preliminary key system schematic diagram.
  3. Requirements for key control system.
  4. Requirements for access control.
  5. Address for delivery of keys.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Client Agency.
- D. Deliver keys and permanent cores to Client Agency by registered mail or overnight package service.

## 1.6 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified elsewhere.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.
  - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.
  - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by descriptive titles corresponding to requirements specified in Part 2.

## 2.2 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:
    - a. Baldwin Hardware Corporation.
    - b. Hager Companies.
    - c. IVES Hardware; an Ingersoll-Rand company.
    - d. McKinney Products Company; an ASSA ABLOY Group company.
    - e. PBB, Inc.
    - f. Stanley Commercial Hardware; Div. of The Stanley Works.
- B. Antifriction-Bearing Hinges:
  - 1. Mounting: Full mortise (butts).
  - 2. Bearing Material: Ball bearing.
  - 3. Grade: Grade 1 (heavy weight).
  - 4. Base and Pin Metal:
    - a. Interior Hinges: Brass with stainless-steel pin body and brass protruding heads.
  - 5. Pins: Non-rising loose unless otherwise indicated.
  - 6. Tips: Flat button.
  - 7. Corners: Square.

## 2.3 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
  - 1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.
  - 2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
  - 3. Deadbolts: Minimum 1-inch (25-mm) bolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm), unless otherwise indicated.
- D. Lock Trim:
  - 1. Description: As indicated in hardware sets.
  - 2. Levers: Wrought, forged or cast.
  - 3. Escutcheons (Roses): Wrought, forged or cast.
  - 4. Dummy Trim: Match lever lock trim and escutcheons.
  - 5. Operating Device: Lever with escutcheons (roses).
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
  - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.

- F. Mortise Locks: BHMA A156.13; Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Best Access Systems; Div. of Stanley Security Solutions, Inc.

## 2.4 ELECTRIC STRIKES

- A. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:
    - a. Adams Rite Manufacturing Co.
    - b. Folger Adam Electric Door Controls; an ASSA ABLOY Group company.
    - c. HES, Inc.; an ASSA ABLOY Group company.
    - d. Security Door Controls.
    - e. Von Duprin; an Ingersoll-Rand company.
  - 2. Material: Stainless steel.
  - 3. Mounting: Mortised.
  - 4. Fire-Rated Door Assemblies: Use fail-secure electric strikes with fire-rated devices.
  - 5. Monitoring: Mechanical latchbolt.
  - 6. Options: Lip extension kit.

## 2.5 MANUAL FLUSH BOLTS

- A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:
    - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
    - b. Door Controls International, Inc.
    - c. Hiawatha, Inc.
    - d. IVES Hardware; an Ingersoll-Rand company.
    - e. Trimco.
- B. Manual-Extension Flush Bolts: Grade 1, fabricated from extruded brass or aluminum, with 12-inch (305-mm) rod actuated by flat lever; listed and labeled for fire-rated doors. Provide with dustproof strike.

## 2.6 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:

- a. Best Access Systems; Div. of Stanley Security Solutions, Inc.
  - b. The above item has been approved by the Department as a Proprietary item. No other item will be accepted. Article 9, Paragraph 9.7, Substitution of Materials of the General Conditions to the Construction Contract does not apply to the above item.
- B. High-Security Lock Cylinders: BHMA A156.30; Grade 1; Type M, mechanical; permanent cores that are removable; face finished to match lockset.
  - 1. Number of Pins: Seven.
  - 2. Type: Mortise type.
- C. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- D. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

## 2.7 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
  - 1. Existing System:
    - a. Master key or grand master key locks to Client Agency's existing system.
- B. Keys: Nickel silver.
  - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
    - a. Notation: "DO NOT DUPLICATE."
  - 2. Quantity: In addition to one extra key blank for each lock, provide the following:
    - a. Cylinder Change Keys: Three.
    - b. Master Keys: Five.
    - c. Grand Master Keys: Five.
    - d. Great-Grand Master Keys: Five.

## 2.8 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:

- a. DORMA Architectural Hardware; Member of The DORMA Group North America.
- b. LCN Closers; an Ingersoll-Rand company.
- c. Norton Door Controls; an ASSA ABLOY Group company.
- d. SARGENT Manufacturing Company; an ASSA ABLOY Group company.

B. Surface Closer with Cover: Grade 1; Modern Type with mechanism enclosed in cover.

1. Mounting: Hinge side.
2. Type: Regular arm.
3. Backcheck: Adjustable, effective between 60 and 85 degrees of door opening.
4. Cover Material: Aluminum.
5. Closing Power Adjustment: At least 50 percent more than minimum tested value.

## 2.9 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:
  - a. Baldwin Hardware Corporation.
  - b. Hager Companies.
  - c. IVES Hardware; an Ingersoll-Rand company.
  - d. Rockwood Manufacturing Company.
  - e. Stanley Commercial Hardware; Div. of The Stanley Works.

B. Dome-Type Floor Stop: Grade 1; with minimum 1-inch- (25-mm-) high bumper for doors without threshold and 1-3/8-inch- (35-mm-) high bumper for doors with threshold.

## 2.10 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick bronze; with manufacturer's standard machine or self-tapping screw fasteners.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:
  - a. Baldwin Hardware Corporation.
  - b. IVES Hardware; an Ingersoll-Rand company.
  - c. Rockwood Manufacturing Company.

B. Kick Plates: 8 inches (203 mm) high by door width with allowance for frame stops.

## 2.11 AUXILIARY ELECTRIFIED DOOR HARDWARE

A. Auxiliary Electrified Door Hardware:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equivalent as approved by the Professional:

- a. GE Security, Inc.
  - b. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
  - c. Schlage Commercial Lock Division; an Ingersoll-Rand company.
  - d. Securitron Magnalock Corporation; an ASSA ABLOY Group company.
  - e. Security Door Controls.
- B. Boxed Power Supplies: Modular unit in NEMA ICS 6, Type 4 enclosure; filtered and regulated; voltage rating and type matching requirements of door hardware served; listed and labeled for use with fire alarm systems.
- C. Door and Frame Transfer Devices: Steel housing for mortise in hinge stile of door, with flexible tube for wiring bundle; accommodating doors that swing open to 120 degrees.

## 2.12 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.
1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
  2. Fire-Rated Applications:
    - a. Wood or Machine Screws: For the following:
      - 1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
      - 2) Strike plates to frames.
      - 3) Closers to doors and frames.
    - b. Steel Through Bolts: Not permitted.
  3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
  4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."

## 2.13 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- B. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

### 3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
  - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  - 2. Custom Steel Doors and Frames: HMMA 831.
  - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's 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. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).
- E. Lock Cylinders: Install construction cores to secure building and areas during construction period.
1. Replace construction cores with permanent cores as directed by Department.
  2. Furnish permanent cores to Client Agency for installation.
- F. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Professional.
1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.
- G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."
- H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.
- I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

### 3.4 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.
1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
  2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

### 3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.

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

### 3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Client Agency's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Section 017900 "Demonstration and Training."

### 3.7 DOOR HARDWARE SCHEDULE

#### A. HARDWARE SET 1

6	Hinges	4-1/2 x 4-1/2 BB1168	26D	Hager
1	Storeroom Lock	47H-7-D-16 PREMIUM	26D	Best Lock Corp
1	Electric Strike	1500 x LMS	32D	HES
1	Overhead Stop	90-S	32D	Glynn-Johnson
1	Door Closer	4021	ALUM	LCN
1	Mounting Plate	4020-18G	ALUM	LCN
2	Kick Plates	K1050 8" x 2" LDW	32D316	Rockwood
1	Flush Bolt	555	26D	Rockwood
1	Dust Strike	570	32D	Rockwood
2	Door Positions	SWITCH DPS-M	GY	Securitron
1	Power Supply	AS REQUIRED	-	-
1	Diagram	SYSTEM WIRING DIAGRAM	-	HES
1	Power Transfer	EPT-10	SP-28	Securitron
4	Silencers	Q146	-	Steelcraft

#### B. HARDWARE SET 2

6	Hinges	4-1/2 x 4-1/2 BB1168	26D	Hager
1	Storeroom Lock	47H-7-D-16 PREMIUM	26D	Best Lock Corp
1	Overhead Stop	90-S	32D	Glynn-Johnson
1	Door Closer	4021	ALUM	LCN
1	Mounting Plate	4020-18G	ALUM	LCN
2	Kick Plates	K1050 8" x 2" LDW	32D316	Rockwood
1	Flush Bolt	555	26D	Rockwood
1	Dust Strike	570	32D	Rockwood
4	Silencers	Q146	-	Steelcraft

#### C. HARDWARE SET 3

3	Hinges	4-1/2 x 4-1/2 BB1168	26D	Hager
1	Storeroom Lock	47H-7-D-16 PREMIUM	32D	Best Lock Corp
1	Electric Strike	1500 x LMS	32D	HES
1	Door Closer	4111-EDA x DEL	ALUM	LCN
1	Kick Plate	K1050 8" x 2" LDW	32D316	Rockwood
1	Kick Plate	K1050 8" x 1" LDW	32D	Rockwood
2	Wall Stop & HO	K1050 8" x 2" LDW	32D	Rockwood
1	Silencers	555	-	Steelcraft
1	Door Position Switch	SWITCH DPS-M	GY	Securitron

D. HARDWARE SET 4

3	Hinges	4-1/2 x 4-1/2 BB1168	26D	Hager
1	Storeroom Lock	47H-7-D-16H PREMIUM	32D	Best Lock Corp
1	Door Position Switch	SWITCH DPS-M	GY	Securitron
1	Door Closer	4111-EDA x DEL	ALUM	LCN
1	Kick Plate	K1050 8" x 2" LDW	32D316	Rockwood
1	Kick Plate	K1050 8" x 1" LDW	32D	Rockwood
2	Wall Stop & HO	K1050 8" x 2" LDW	32D	Rockwood
1	Silencers	555	-	Steelcraft

E. HARDWARE SET 5

6	Hinges	SALVAGE, CLEAN & REUSE EXISTING		
1	Storeroom Lock	47H-7-D-16 PREMIUM	613	Best Lock Corp
1	Electric Strike	1500 x LMS	613	HES
2	Kick Plates	K1050 8" x 2" LDW	613	Rockwood
1	Flush Bolt	556	613	Rockwood
1	Dust Proof Strike	570	613	Rockwood
1	Power Supply	AS REQUIRED	-	-
1	Power Transfer	EPT-10	SP-313	VonDuprin
1	Diagram	SYSTEM WIRING DIAGRAM	-	HES

F. HARDWARE SET 6<sup>1</sup>

1	Passage Set <sup>2</sup>	45H-O-N-16H	32D	Best Lock Corp
1	Magnetic Lock	M62-PG-P	26D	Securitron
1	Power Supply	AS REQUIRED		

<sup>1</sup> All existing hardware to remain unless noted otherwise.

<sup>2</sup> Remove existing mortise lockset and turn over to the Client Agency. Install new mortise passage set.

END OF SECTION 087111