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**BuildingName**  
**The Description of the Project**  
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**DOCUMENTS**

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**SPECIFICATION DIVISION 8**

NUMBER            SECTION DESCRIPTION

**DIVISION 08 DOOR AND WINDOWS**

SECTION 08710 - DOOR HARDWARE

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**DIVISION 08 DOOR AND WINDOWS**  
**SECTION 08710 - DOOR HARDWARE**

*APRIL 2005 - UPDATED SWEEP SEALS, JAMB SEALS AND THRESHOLDS.*

*FEBRUARY 2007 - UPDATED TO REMOVE SPECIFIC REFERENCES TO RICK HADDEN. QUESTIONS REGARDING CORE TYPE, KEYING, AND BUILDING STANDARDS SHOULD BE DIRECTED TO A LOCKSMITH AT THE KEY OFFICE. IN GENERAL, AVOID USE OF SPECIFIC CONTACT NAMES IN SPECIFICATION.*

*DECEMBER 2008 - ADDED SUBMITTAL REQUIREMENTS, ADDED ACCESS CONTROL PRODUCTS AND UPDATED PRODUCT NUMBERS.*

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Extent of door hardware is indicated on drawings and in schedules.

*EDIT BELOW TO SUIT PROJECT.*

- B. Types of door hardware include:

Hinges.  
Closers.  
Double-acting closer/pivot sets.  
Door Operators.  
Locks and latches.  
Digital locks.  
Touch latches.  
Roller latches.  
Stops.  
Silencers.  
Push/pull sets.  
Exit device (panic set).  
Astragals.  
Flush bolts.  
Coordinators.  
Trim protector bars.  
Kickplates.  
Sweep seals.  
Jamb seals.  
Automatic door bottoms.  
Electrically activated hold-open devices.  
Thresholds.  
Concealed power transfer.  
Door position switch.  
Request to exit sensor.

- C. Hardware for Cabinetry, other than laboratory casework, is specified in Division 6 Section "Architectural Woodwork".

*DELETE ABOVE IF NO CABINETRY. DELETE BELOW IF NO ALUMINUM ENTRANCES.*

- D. Hardware for aluminum entrance doors is included is specified in Division 8 Section "Aluminum Entrances and Storefront."

*DELETE BELOW IF NO LABORATORY CASEWORK.*

- E. Hardware for Laboratory Casework is specified in Division 12 Section "Laboratory Casework and Fixtures".

## 1.2 SUBMITTALS

- A. Submittals: Submit the following:

1. Mfr's product literature.
2. Schedule of hardware showing application to project.
3. Furnish templates to each fabricator of doors and frames, as required for preparation to receive hardware.

*INCLUDE 4 & 5 BELOW FOR PROJECTS WITH ELECTRIFIED HARDWARE.*

4. 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.

*RETAIN FOUR SUBPARAGRAPHS BELOW IF ELECTRIFIED DOOR HARDWARE IS COMPLEX. IF ONLY ELECTRIC STRIKES ARE REQUIRED, THIS LEVEL OF DETAIL MIGHT NOT BE NECESSARY.*

- 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.
5. Operation Narrative: Describe the operation of doors controlled by electrified door hardware. Include description of how the opening is to function at all times, including normal operation, upon activation of the building fire alarm system, and upon loss of power.

*TYPICALLY DELETE BELOW -- INCLUDE FOR PROJECTS IN BFS BUILDINGS WITH SPECIAL LOCKING ARRANGEMENTS THAT IMPEDE EGRESS (I.E. DELAYED EGRESS, DOOR INTERLOCKS)*

6. Special locking arrangements in buildings under the jurisdiction of the State of Michigan Bureau of Fire Services (BFS) require submission of the following documents to BFS for door locking review:
  - a. Floor plan showing door locations to be locked and type of hardware and equipment scheduled for installation.
  - b. A description of the "sequence of operations" of the door locking system outlining operation during normal operation, upon activation of the building fire alarm system, and upon loss of primary power the fire alarm system.
  - c. Product literature for the door hardware and related equipment, including locks, control equipment, accessory equipment, power supplies, and any other hardware used.

**1.3 QUALITY ASSURANCE**

- A. Standards: Where base material and quality of finish are not otherwise specified, comply with ANSI A 156 series standards applicable to each particular type of hardware.
- B. 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.

*DELETE "MAINTENANCE" ARTICLE BELOW IF LESS THAN 20 TOTAL LOCKSETS ARE INCLUDED IN PROJECT.*

**1.4 MAINTENANCE**

- A. Attic Stock: Provide additional locksets, complete with levers, escutcheons and other specified trim, but not including cylinders, as follows:
  - 1. For each individual lock function type, provide additional locksets of the same function in the following quantities:
    - a. For less than 20 locksets: No attic stock.
    - b. For 20 locksets or more, but less than 100 locksets: 2 additional units.
    - c. For 100 locksets or more: 4 additional units.
    - d. For each 50 additional locksets over 100 units: 1 additional unit.
  - 2. When 20 or more locksets of all function types are scheduled, but less than 20 are of a single function, provide 2 additional locksets of functions selected by the Architect from the range of function types included in the Project.
  - 3. Deliver attic stock units to Owner's Key Office in manufacturer's original packaging. Clearly mark each box with Project title, including building and description, and University of Michigan Project Number.

**PART 2 - PRODUCTS**

*THE HARDWARE INCLUDED IN THIS SECTION IS NOT NECESSARILY SUITABLE FOR ALUMINUM ENTRANCE DOORS. SEE SEPARATE HARDWARE SPECIFICATIONS INCLUDED IN SECTION 08410 - ALUMINUM ENTRANCE AND STOREFRONT FOR APPROPRIATE HARDWARE FOR THOSE APPLICATIONS.*

*THE HARDWARE INCLUDED IN THIS SECTION MAY ALSO NOT BE SUITABLE FOR FIRE-RATED FRP DOORS. CONSULT WITH DOOR AND HARDWARE MFRS TO DETERMINE UL LISTED HARDWARE.*

**2.1 HARDWARE, GENERAL**

- A. Finish of Hardware: Unless otherwise indicated, provide hardware with the following finish:

*SELECT FINISHES FROM LIST BELOW, OR REVISE TO SUIT PROJECT. GENERALLY MATCH HARDWARE FINISH OF ADJACENT WORK IN BUILDING.*

**CONTACT A LOCKSMITH AT THE KEY OFFICE WITH QUESTIONS REGARDING SPECIFIC FINISH FOR EACH BUILDING.**

1. US 10 (satin bronze).
2. US 26D (dull chrome).
3. US 32D (satin stainless).

## **2.2 HINGES**

- A. Provide 5-knuckle, 2 ball-bearing hinges; swaged; inner leaf beveled; with square corners; nonremovable pin, complete with set screw (knurled pin not acceptable); and as follows:

**SELECT FULL MORTISE UNLESS OTHERWISE REQUIRED.**

1. Type: Full-mortise.
2. Type: Half-surface.
3. Type: Half-mortise.
4. Type: Full surface.

**SELECT ONE OF THE FOLLOWING. STEEL IS REQUIRED FOR FIRE RATED OPENINGS. REMEMBER TO REQUIRE STAINLESS STEEL OR BRASS FOR EXTERIOR DOORS, OR WHERE CORROSION COULD OTHERWISE BE EXPECTED.**

5. Base Metal: Steel.
6. Base Metal: Stainless Steel.
7. Base Metal: Brass.

**SELECT FROM VARIOUS FINISHES, OR RETAIN THE FOLLOWING. FINISH METALS ARE PLATED OVER STEEL OR BRASS, OR IN THE CASE OF STAINLESS STEEL AND BRASS, THE BASE METAL MAY BE FINISHED.**

8. Finish: To match "Finish of Hardware" requirements of this Section.
9. Size and Weight: Provide hinges sized as follows:

**BELOW FOR MOST STANDARD DOORS.**

- a. Doors not wider than 3 feet 6 inches nor taller than 7 feet 6 inches:
  - 1) Size: 4-1/2 inches by 4-1/2 inches; 0.180-inch thick.

**ABOVE FOR HEAVY, HIGH-FREQUENCY DOORS. BELOW IS ECONOMICAL HINGE FOR MEDIUM WEIGHT, AVERAGE FREQUENCY DOORS.**

- 2) Size: 4-1/2 inches by 4-1/2 inches; 0.134-inch thick.

**BELOW FOR EXTRA LARGE DOORS.**

- b. Doors wider than 3 feet 6 inches or taller than 7 feet 6 inches:
  - 1) Size: 5 inches by 4-1/2 inches; 0.190-inch thick.

**ABOVE FOR HEAVY, HIGH-FREQUENCY DOORS. BELOW IS ECONOMICAL HINGE FOR MEDIUM WEIGHT, AVERAGE FREQUENCY DOORS.**

- 2) Size: 5 inches by 4-1/2 inches; 0.145-inch thick.

**DELETE BELOW UNLESS 1-3/8 INCH THICK INCLUDED. NOTE THAT BELOW SELECTION IN FOR AVERAGE FREQUENCY SERVICE DOORS - MODIFY VALUE TO .180 FOR HIGH FREQUENCY DOORS**

- c. Doors 1-3/8 inches thick and not wider than 3 feet nor taller than 7 feet: 4-1/2 inches by 4 inches; 0.134-inch thick.
- 10. Manufacturer of Butts: Subject to compliance with requirements, products of Hager, Ives, McKinney, or Stanley.

**USE BELOW FOR VERY HIGH FREQUENCY AND/OR HEAVY DOORS. STANDARD FOR MOST HOUSING WORK.**

- B. Continuous Gear Hinges: Provide units designed for heavy-duty, high-traffic use in new applications. Fabricate units of Class I anodized, 6063 T6 aluminum alloy with polyacetal thrust bearings.
  - 1. Color: Clear anodized
  - 2. Color: Dark bronze anodized.

**BELOW IS STANDARD. ALSO AVAILABLE ARE RETROFIT UNITS THAT COVER BUTT CUT OUTS ON EXISTING FRAMES, AND A VARIETY OF FULL- AND HALF-SURFACE UNITS - SEE PRODUCT CATALOGS**

- 3. Product/Manufacturer: SL-11HD; Select Products Limited, or equivalent products of Hager-Roton or Pemko.

### **2.3 CLOSERS**

- A. Provide closers with field-adjustable, full-range sizing feature capable of complying with manufacturer's size recommendations for application indicated; and complying with applicable portions of the Americans with Disabilities Act (ADA).
  - 1. Manufacturer/Model: 4000 Series "Smoothee"; LCN only.

**SELECT ONE OF THE FOLLOWING. IF CLOSER IS BEING SPECIFIED TO INCLUDE A STOP USE ONLY THE CUSH-N-STOP.**

- a. Series No.: 4010 series (mounted on pull side of door).
- b. Series No.: 4020 series (mounted above door on push side).
- c. Series No.: 4110 series (mounted on push side of door).
- d. Series No.: 4110 series with 3077 SC spring cush arm (mounted on push side of door).

**INCLUDE BELOW IF CUSH UNITS ARE SPECIFIED.**

- 2. Provide "cush" units with cush shoe support.
- B. Unless otherwise indicated, mount closer bodies on room side (not corridor side) of doors. Refer doubtful conditions to Architect for decision.

**THE FOLLOWING CLOSER/PIVOT SET CAN BE USED TO HANG AND CONTROL DOUBLE-ACTING DOORS OF WOOD, ALUMINUM OR HOLLOW METAL CONSTRUCTION. SIMPLE DOUBLE-ACTING HINGES CAN ALSO BE USED, BUT REQUIRE LARGE CLEARANCES TO WORK PROPERLY.**

### **2.4 DOUBLE-ACTING CLOSER/PIVOT SETS**

- A. Provide concealed, double-acting closer for installation in hollow metal frame, and adequately sized in accordance with manufacturer's recommendations to suit door type, size and application.

1. Manufacturer/Model: No. 6030; LCN only.
  2. Provide units with manufacturer's standard adjustable auxiliary stops.
- B. Accessory Hinges: Provide manufacturer's standard center pivot sets designed specifically for use with indicated closer.
1. Manufacturer/Model: No. 7255; Ives only.

**THE FOLLOWING IS THE UNIVERSITY STANDARD ADA DOOR OPERATOR. NOTE THE FOLLOWING:**

1. IF A DOOR OPERATOR IS USED IN LIEU OF PHYSICAL OPERATING CLEARANCES ON THE EGRESS SIDE, IT MUST BE CONNECTED TO EMERGENCY POWER (I.E. BUILDING GENERATOR). BATTERY BACKED OPTIONS ARE NOT AVAILABLE. (NFPA 80)
2. ON ALL FIRE RATED DOORS, DOOR OPERATORS ARE REQUIRED TO BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM (NFPA 80). IF DOOR IS TIED TO BUILDING FIRE ALARM SYSTEM, COMMUNICATE RELATED OPERATIONAL ISSUES TO BUILDING MANAGER. COORDINATE WITH DESIGN MANAGER.

## 2.5 DOOR OPERATORS

- A. General: Of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated.
1. Type: Low-energy power operated, complying with ANSI/BHMA A156.19.
  2. Connections: For power and control wiring.
  3. Adjustment Features: Fully adjustable without removing entrance doors, including
  4. On/Off Feature: On/off/hold-open switch controls electric power to operator.
- B. Electromechanical Operators: Self-contained overhead units, with closing speed controlled by gear train and dynamic braking action of electric motor and with manual operation and spring closing when power is off.
1. Closing Mechanism: Power-assisted spring operated.
  2. Mounting: Surface mounted
  3. Manual Operation: Requires less than 50 lbf to set door in motion when power is off, according to ANSI/BHMA A156.10.
  4. Activation Device: Manufacturer's standard 4" diameter round stainless steel push-plate switch with contrasting-colored, engraved message. International symbol of accessibility and "Push to Open."
- C. Manufacturer/Model No. of Door Operator: LCN only. Model 4642 (for push side mount) or 4631 (for pull side mount).

**INCLUDE THE FOLLOWING FOR DOORS CONNECTED TO BUILDING FIRE ALARM SYSTEM.**

- D. Provide acrylic sign adjacent to door actuator:



1. Copy: "Push button disabled during fire alarm"
2. Color, font, and details to match building standard room signs.

## 2.6 LOCKS AND LATCHES

**FOR CONSISTENCY AND EASE IN KEYING IN EXISTING BUILDINGS, VERIFY WHICH MANUFACTURER'S CORES ARE USED IN THAT BUILDING. SPECIFY CORES FROM SAME MANUFACTURER FOR NEW DOORS.**

- A. Locks and Latches: Provide mortise type, lever handle lock and latch sets equipped with 7-pin removable core type lock cylinders, in a masterkey system to be designed by Owner. With each lockset, furnish companion strike as indicated, for installation on door jamb. Keying is the responsibility of the Contractor; and shall be performed by the cylinder supplier. Deliver keyed cores to the University of Michigan Key Office for Owner installation. Contact the Owner's Key Office (764-3481) for questions concerning keying.
1. Provide lock and latchsets on doors to hazardous areas with knurled handle surfaces. Hazardous areas include mechanical rooms, elevator machine rooms, electrical closets and substation rooms, and stairways.
  2. Manufacturer/Model of Lock/Latch Sets: Provide the following units, or equivalent products of Corbin Russwin (ML2000 series), or Schlage (L9000 Series):

**BELOW ARE EXAMPLES OF TYPICAL UNITS. BE SURE TO CHECK THE TRIM STYLE DESIRED. BELOW IS SHAPED LEVER ARM; TUBE TYPE IS LNH. GENERALLY, MATCH STYLES IN ADJACENT PORTIONS OF BUILDING. CONTACT A LOCKSMITH AT THE KEY OFFICE FOR INFORMATION ON EXISTING LOCK STYLES.**

**ANSI FUNCTION CODES LISTED BELOW IF AVAILABLE. USE CODE TO DETERMINE EQUIVALENCE BETWEEN MANUFACTURERS DURING SUBMITTAL PHASE.**

- a. Office Lockset: ANSI function F04; Sargent LNJ x 8205.
- b. Classroom Lockset: ANSI function F05; Sargent LNJ x 8237.
- c. Passage Lockset: ANSI function F01; Sargent LNJ x 8215.

**THE FOLLOWING SPACES SHOULD HAVE STORE ROOM FUNCTION SETS: PHONE CLOSETS AND TELECOMMUNICATION ROOMS, MECHANICAL ROOMS, ELEVATOR MACHINE ROOMS, SUBSTATIONS AND TUNNEL DOORS.**

- d. Service/Store Room Lockset: ANSI function F07; Sargent LNJ x 8204.
- e. Privacy Lockset with "Occupied" Indicator and keyed override: Schlage L9496.

**BELOW IS STANDARD FAIL SAFE MORTISE LOCKSET FOR USE WHEN A POSITIVE LATCH IS REQUIRED (FIRE RATED DOOR)**

- f. Electrically Unlocked Service Storeroom Lockset, Fail Secure: Schlage L9080EU

*FOR EACH PROJECT, CONSULT WITH A LOCKSMITH IN THE KEY OFFICE TO SELECT THE APPROPRIATE CYLINDER TYPE AND KEYWAY. ADD KEYWAY TYPE BELOW (EXAMPLE - BEST "H KEYWAY")*

3. Manufacturer/Model of Cylinders: Provide cylinders by the following manufacturer (Contact University of Michigan Key Office for cylinder information):
  - a. Best
  - b. Medeco Keymark
  - c. Schlage Everest

*INCLUDE THE FOLLOWING IF EXTERIOR DOORS WILL BE INCLUDED IN PROJECT, OTHERWISE DELETE.*

4. Construction Locks: In each exterior door, provide temporary cylinders, installed simultaneously with the lock. Temporary cylinders shall remain for the duration of construction.

## **2.7 DIGITAL LOCKS**

*USE BELOW FOR ALL ANIMAL HOLDING ROOM APPLICATIONS. FOR OTHER USES, ANOTHER LOCK FUNCTION MAY BE NEEDED. SELECT THE APPROPRIATE LEVER STYLE FROM THE OPTIONS OFFERED. PROGRAMMING IS DONE AT THE READER; SOFTWARE NOT NEEDED.*

- A. Digital Locks: Provide manufacturer's standard battery operated digital locks complete with mounting hardware, cylinder, strike, and with features and accessories indicated:

*PART NUMBERS BELOW INCLUDES LEVER STYLE TO MATCH SARGENT J-STYLE LEVER.*

*PART NUMBER BELOW IS KEYPAD ONLY*

1. Manufacturer/Product: Schlage only; Model CO-100-MS-70-KP with TLR Tubular lever style.
2. Finish: US 26D (dull chrome).

*USE BELOW FOR LSA APPLICATIONS. COORDINATE FUNCTION WITH LSA REP AND CLASSROOM OPERATIONS. SELECT THE APPROPRIATE LEVER STYLE FROM THE OPTIONS OFFERED. NOTE THAT SOFTWARE AND HANDHELD DEVICE IS REQUIRED FOR PROGRAMMING.*

- B. Digital Locks: Provide manufacturer's standard battery operated digital locks complete with mounting hardware, cylinder, strike, and with features and accessories indicated:

*PART NUMBERS BELOW INCLUDES LEVER STYLE TO MATCH SARGENT J-STYLE LEVER.*

*PART NUMBER BELOW IS KEYPAD ONLY*

1. Manufacturer/Product: Schlage only; Model CO-200-MS-70-KP with TLR Tubular lever style.

*PART NUMBER BELOW IS MAG STRIP ONLY*

2. Manufacturer/Product: Schlage only; Model CO-200-MS-70-MS with TLR Tubular lever style.
3. Finish: US 26D (dull chrome).

**THE FOLLOWING ITEM IS FOR APPLICATION TO STANDARD DOORS -  
OPERATION SIMILAR TO CABINET TYPE TOUCH LATCHES.**

**2.8 TOUCH LATCHES**

- A. Latch unit consists of concealed, integral latching mechanism and spring that releases and springs door into open position when face of door is pushed.
  - 1. Manufacture/Model of Touch Latches: Ives No. CL12, complete with related strike.

**BELOW FOR CLOSET DOORS ONLY.**

**2.9 ROLLER LATCHES**

- A. Forged bronze roller latches with rubber roller. Furnish units designed to be mortised into door, and with adjusting screws on face of latch. With each roller latch, furnish companion strike for installation on jamb.
  - 1. Manufacturer/Model of Roller Latches: Ives model no. RL30, or equivalent products of Rockwood or Door Controls International.

**2.10 STRIKES**

- A. Mechanical Strikes: Provide handed-type strike plates with curved lip; flat (non-handed) strikes are not permitted.

**USUALLY RETAIN THE FOLLOWING UNLESS CERTAIN THAT EXTENDED LIPS ARE NOT REQUIRED.**

- 1. Provide strike plates with extended lips where required to protect door frame and trim from being marred by latchbolt. Provide strike plates that project not more than 1/8 inch beyond door frame trim at single doors; and flush with face of doors at double (pair) door applications.
- 2. Provide custom-fabricated strike plates at existing door frames if required for compatibility with new lockset or latchset units. Fabricate units of base metal and finish specified. Provide units manufactured by Accurate Hardware Inc., or equivalent.

**USE THE FOLLOWING ELECTRIC STRIKE FOR SINGLE ACCESS CONTROL DOORS THAT ARE NOT RATED.**

- B. Electric Strikes: Provide electric door strikes of the appropriate model for the associated door's lock.
  - 1. Manufacturer/Model:  
Von Duprin, 6000 series (6112 or 6215).  
HES, 1006, 9600, and 9400 series.

**2.11 STOPS**

- A. Provide rubber exposed resilient parts; size and mount units to comply with mfr's recommendations for the exposure condition. Reinforce the substrate as recommended.

**SELECT ONE OF THE FOLLOWING.**

1. Color of Resilient Parts: Black.
2. Color of Resilient Parts: Gray.
3. Manufacturer/Model of Stops: Rockwood model indicated, or equivalent products of Brookline, Builder's Brass Works, Ives, Stanley, Door Controls International.

**SELECT ONE OF THE FOLLOWING TO SUIT PROJECT AND SUBSTRATE.**

- a. Model No.: 442 (floor mounted).
- b. Model No.: 440 (floor mounted, limited door bottom clearance).
- c. Model No.: 409 (wall mounted, hollow wall expansion anchor).
- d. Model No.: 410 (wall mounted, plastic).
- e. Model No.: 411 (wall mounted, expansion shield).

**DELETE ABOVE AND RETAIN BELOW FOR HOSPITAL PROJECTS. VERIFY THAT HOLD OPEN IS COMPATIBLE WITH CLOSER SPECIFIED.**

- B. Provide concealed overhead door stops that attach to top of door and to door frame.
  1. Manufacturer/Model of Overhead Door Stops: Glynn-Johnson 410 series, or equivalent products of Rixson (6 series) or Rockwood (14000 series).

**2.12 SILENCERS**

- A. Provide manufacturer's standard profile silencers of 1/8-inch thick hard rubber for metal door frames as follows:
  1. Manufacturer: Ives or Rockwood.

**2.13 PUSH/PULL SET**

- A. Provide pull handles and push plates with concealed mounting fasteners wherever possible, and as follows:

**SELECT BELOW AS APPROPRIATE TO PROJECT.**

1. Material: Solid stainless steel.
2. Material: Solid brass.
3. Material: Solid nylon plastic.

**SELECT ONE FINISH BELOW.**

4. Finish: Satin.
5. Finish: Polished.
6. Finish: Gloss.

**SELECT ONE COLOR OPTION BELOW.**

7. Color: Clear and transparent.
8. Color: INSERT COLOR
9. Manufacturer/Model of Push/Pull Set: Subject to compliance with requirements, provide the following, or equivalent products of Baldwin, Brookline, Builder's Brass Works, Corbin Russwin, Ives, Sargent, Stanley.
  - a. Push Plates: EXAMPLE Rockwood; No. 71 (6 inches by 15 inches).

- b. Pulls: EXAMPLE Rockwood; No. 112 (13 inches by 1 inch diameter.; and No. 71 (6 inches by 15 inches) base plate.

*EXIT DEVICES BELOW FOR STEEL AND WOOD DOORS ONLY. FOR ALUMINUM DOORS, SEE HARDWARE LISTED IN SECTION 8410 - ALUMINUM ENTRANCE AND STOREFRONT.*

**2.14 EXIT DEVICE (PANIC SET)**

*EXIT DEVICES LISTED BELOW ARE APPROVED BY PLANT DEPARTMENT. USE RIM TYPE DEVICES EXCEPT AT MULLIONLESS DOUBLE DOOR OPENINGS.*

*APPLICATION: SINGLE DOOR OR DOUBLE DOOR WITH MULLION, WOOD OR STEEL, NON-FIRE-RATED.*

- A. Non-Fire-Rated Rim Type Exit Device: Rim type units activated by a partial-width touch-bar, complete with accessories, including strike and hex-key operated dogging device mounted on mechanism housing to hold the touch-bar depressed and the latch bolt in the open position.

*IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.*

*BELOW IS UNIT WITH OUTSIDE KEY CYLINDER RETRACTING LATCH BOLT, AND WITH OPTIONAL PULL HANDLE. POSSIBLE USE IN PUBLIC BUILDING ENTRANCE AND SECURE CORRIDOR-TO-ROOM ENTRANCE.*

- a. Manufacturer/Model of Exit Devices: Von Duprin model 98NL with 990NL-R trim; or equivalent products of Sargent only.

*BELOW IS UNIT WITH NO OUTSIDE CYLINDER, BUT WITH PULL HANDLE. POSSIBLE USE IN SERIES OF MULLIONED OPENINGS WHERE ANOTHER DOOR HAS CYLINDER FOR ENTRY.*

- b. Manufacturer/Model of Exit Devices: Von Duprin model 98DT with 990DT trim; or equivalent products of Sargent only.

*BELOW IS UNIT WITH NO OUTSIDE CYLINDER AND NO PULL HANDLE. POSSIBLE USE IN SECURED EXIT ONLY FOR BUILDING.*

- c. Manufacturer/Model of Exit Devices: Von Duprin model 98EO; or equivalent products of Sargent only.

*BELOW IS UNIT WITH OUTSIDE CYLINDER. PULL HANDLE MUST BE SPECIFIED SEPARATELY (OPTIONAL VON DUPRIN OR HEWI, FOR EXAMPLE). USE SIMILAR TO FIRST EXAMPLE ABOVE.*

- d. Manufacturer/Model of Exit Devices: Von Duprin model 98NL-OP with 110NL trim; or equivalent products of Sargent only.

*APPLICATION: SINGLE DOOR OR DOUBLE DOOR WITH MULLION, WOOD OR STEEL, FIRE-RATED.*

- B. Fire-Rated Rim Type Exit Device: Fire-rated, UL listed, rim type units activated by a partial-width touch-bar, complete with accessories including strike.

*IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.*

*BELOW IS UNIT WITH OUTSIDE CYLINDER RETRACTING LATCH BOLT, AND WITH OPTIONAL (RIGID) LEVER HANDLE. POSSIBLE USE IN ELECTRICAL SUBSTATIONS.*

- a. Manufacturer/Model of Exit Devices: Von Duprin model 98NL-F, 992L-rigid trim, and optional no. 03 lever; or equivalent products of Sargent only.

*BELOW IS UNIT WITH DOUBLE CYLINDER. POSSIBLE USE IN RATED, SECURED, CORRIDOR-TO-ROOM ENTRANCE.*

- b. Manufacturer/Model of Exit Devices: Von Duprin model 98L-F, 992L-double cylinder function trim and standard no. 06 lever; or equivalent products of Sargent only.

*BELOW IS UNIT WITH NO OUTSIDE CYLINDER. POSSIBLE USE IN STAIR DOOR APPLICATIONS.*

- c. Manufacturer/Model of Exit Devices: Von Duprin model 98L-F-BE, 992L-R with optional no. 03 lever; or equivalent products of Sargent only.

*APPLICATION: DOUBLE DOORS WITHOUT MULLION, WOOD OR STEEL, NON-FIRE-RATED.*

- C. Non-Fire-Rated Surface Mounted Vertical Rod Type Exit Device: Surface mounted, vertical rod type units activated by a partial-width touch-bar, complete with accessories including strike. Equip units with hex-key operated dogging device mounted on mechanism housing to hold the touch-bar depressed and the latch bolt in the open position. Omit bottom rods unless otherwise indicated.

*IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.*

*BELOW IS UNIT WITH OUTSIDE CYLINDER RETRACTING LATCH BOLT (NIGHT LATCH FUNCTION) AND STANDARD PULL HANDLE. LIMIT USE TO MECHANICAL, ELECTRICAL OR SIMILAR SERVICE ROOMS THAT CAN ACCEPT NIGHT-LATCH FUNCTION - OTHERWISE USE MORTISE TYPE DEVICE WITH DOUBLE CYLINDER (SEE SUBSEQUENT PARA BELOW). USE IN CONJUNCTION BLANK ESCUTCHEON FUNCTION DEVICE BELOW ON OTHER DOOR OF PAIR.*

- a. Manufacturer/Model of Exit Devices: Von Duprin model 9827NL, 990NL-V trim; or equivalent products of Sargent only.

*BELOW IS UNIT WITH BLANK ESCUTCHEON AND STANDARD PULL HANDLE. USE IN CONJUNCTION WITH NIGHT LATCH FUNCTION UNIT ABOVE.*

- b. Manufacturer/Model of Exit Devices: Von Duprin model 9872NL-BE, 990NL-V trim; or equivalent products of Sargent only.

*BELOW IS UNIT WITH BLANK ESCUTCHEON AND OPTIONAL LEVER HANDLE. USE IN CONJUNCTION WITH NON-FIRE-RATED MORTISE UNIT (SEE SUBSEQUENT PARA BELOW) .*

- c. Manufacturer/Model of Exit Devices: Von Duprin model 9827L-BE, 992L-rigid trim; or equivalent products of Sargent only.

*APPLICATION: DOUBLE DOORS WITHOUT MULLION, WOOD OR STEEL, FIRE-RATED.*

- D. Fire-Rated Surface Mounted Vertical Rod Type Exit Device: Fire-rated, UL listed, surface mounted, vertical rod type units activated by a partial-width touch-bar, complete with accessories including strike.

*IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.*

*BELOW IS UNIT WITH OUTSIDE CYLINDER RETRACTING LATCH BOLT, AND WITH OPTIONAL (RIGID) LEVER HANDLE (PULL COULD ALSO BE USED - SPEC 9827NL-F). LIMIT USE TO MECHANICAL, ELECTRICAL OR SIMILAR SERVICE ROOMS THAT CAN ACCEPT NIGHT-LATCH FUNCTION - OTHERWISE USE MORTISE TYPE DEVICE WITH DOUBLE CYLINDER (SEE SUBSEQUENT PARA BELOW). USE IN CONJUNCTION WITH EXIT ONLY FUNCTION DEVICE (9827EO-F) ON OTHER DOOR OF PAIR.*

- a. Manufacturer/Model of Exit Devices: Von Duprin model 9827L-F, 992L-rigid trim with optional no. 03 lever; or equivalent products of Sargent only.

*BELOW IS UNIT WITH NO OUTSIDE TRIM FOR EXIT ONLY. USE THIS UNIT IN CONJUNCTION WITH EITHER VERTICAL SURFACE ROD DEVICE IMMEDIATELY ABOVE OR MORTISE UNIT WITH DOUBLE CYLINDER DESCRIBED IN SUBSEQUENT PARA BELOW.*

- b. Manufacturer/Model of Exit Devices: Von Duprin model 9827EO-F; or equivalent products of Sargent only.

*APPLICATION: DOUBLE DOORS WITHOUT MULLION, WOOD OR STEEL, NON-FIRE-RATED. THE ONLY SANCTIONED USE OF THE MORTISE DEVICE BELOW IS IN A MULLIONLESS OPENING AS PART OF A PAIR, WITH THE OTHER DEVICE A VERTICAL SURFACE ROD TYPE.*

- E. Non-Fire-Rated Mortise Type Exit Device: Surface mounted, vertical rod type units activated by a partial-width touch-bar, complete with accessories including strike. Equip units with hex-key operated dogging device mounted on mechanism housing to hold the touch-bar depressed and the latch bolt in the open position. Omit bottom rods unless otherwise indicated.

*IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.*

BELOW IS UNIT WITH OUTSIDE CYLINDER RETRACTING LATCH BOLT, AND WITH OPTIONAL DOUBLE CYLINDER INSTALLED INSIDE ON LATCH HEAD. THIS COMBINATION IMPROVES LOCKING FUNCTION FLEXIBIITY AND IS PREFERRED BY PLANT. USE AS ONE OF A PAIR IN A MULLIONLESS OPENING, WITH THE OTHER DOOR EQUIPPED WITH DEVICE HAVING VERTICAL SURFACE RODS AND BLANK ESCUTCHEON FUNCTION INDICATED IN NON-FIRE-RATED DEVICE PARA ABOVE (9827NL-BE OR 9872L-BE).

- a. Manufacturer/Model of Exit Devices: Von Duprin model 9875L, 992L-M-double cylinder trim, and with optional no. 03 lever; or equivalent products of Sargent only.

BELOW IS UNIT SAME AS ABOVE, EXCEPT FOR APPLICATIONS THAT DO NOT REQUIRE SECURED (LOCKABLE) DOORS. USE AS ONE OF A PAIR IN A MULLIONLESS OPENING, WITH THE OTHER DOOR EQUIPPED WITH DEVICE HAVING VERTICAL SURFACE RODS AND BLANK ESCUTCHEON FUNCTION INDICATED ABOVE (9827NL-BE OR 9872L-BE).

- b. Manufacturer/Model of Exit Devices: Von Duprin model 9875L-F-BE, and with optional no. 03 lever; or equivalent products of Sargent only.

APPLICATION: DOUBLE DOORS WITHOUT MULLION, WOOD OR STEEL, FIRE-RATED. THE ONLY SANCTIONED USE OF THE MORTISE DEVICE BELOW IS IN A MULLIONLESS OPENING AS PART OF A PAIR, WITH THE OTHER DEVICE A VERTICAL SURFACE ROD TYPE. WHERE THE SELECTIONS INDICATED WOULD INTERFERE WITH TWO-WAY CORRIDOR TRAFFIC, AND A MULLIONED OPENING CANNOT BE SUBSTITUTED, CONSIDER PROVIDING ELECTRIC HOLD-OPEN DEVICES.

- F. Fire-Rated Mortise Type Exit Device: Fire-rated, UL listed, mortise type units activated by a partial-width touch-bar, complete with accessories including strike.

IT IS STRONGLY RECOMMENDED THAT YOU SELECT APPROPRIATE UNITS AND TRIM FROM CATALOG. USE CHOICES BELOW ONLY FOR VERY SIMPLE PROJECTS.

BELOW IS UNIT WITH OUTSIDE CYLINDER RETRACTING LATCH BOLT, AND WITH OPTIONAL DOUBLE CYLINDER INSTALLED INSIDE ON LATCH HEAD. THIS COMBINATION IMPROVES LOCKING FUNCTION FLEXIBIITY AND IS PREFERRED BY PLANT. USE AS ONE OF A PAIR IN A MULLIONLESS OPENING, WITH THE OTHER DOOR EQUIPPED WITH DEVICE HAVING VERTICAL SURFACE RODS AND EXIT-ONLY FUNCTION (9827EO-F).

- a. Manufacturer/Model of Exit Devices: Von Duprin model 9875L-F, 992L-M-double cylinder trim, and with optional no. 03 lever; or equivalent products of Sargent only.

BELOW IS UNIT SAME AS ABOVE, EXCEPT FOR APPLICATIONS THAT DO NOT REQUIRE SECURED (LOCKABLE) DOORS. USE AS ONE OF A PAIR IN A MULLIONLESS OPENING, WITH THE OTHER DOOR EQUIPPED WITH DEVICE HAVING VERTICAL SURFACE RODS AND EXIT-ONLY FUNCTION (9827EO-F).

- b. Manufacturer/Model of Exit Devices: Von Duprin model 9875L-F-BE, 992L-M trim and with optional no. 03 lever; or equivalent products of Sargent only.



**2.15 ASTRAGALS**

- A. Manufacturer/Model of Astragals: EXAMPLE Pemko; No. 357SP, or equivalent products of National Guard, Reese, Zero.

**2.16 FLUSH BOLTS**

*DO NOT EDIT WITHOUT PRODUCT CATALOG.*

- A. Manual Flush Bolts: Mortise units, UL listed and rated for indicated application, with spring loaded snap action levers for manual operation.

*USE BELOW ON RATED DOORS WHERE INACTIVE LEAF NOT REQUIRED FOR EGRESS.*

- 1. Manufacturer/Model of Manual Flush Bolts: Provide Ives model numbers indicated or equivalent products of Rockwood or Door Controls International, as follows:

*DELETE INAPPROPRIATE TYPES BELOW.*

- a. Metal Doors: FB458, both top and bottom bolts.
- b. Wood Doors: FB358, both top and bottom bolts.

*SELECT ONE OF THE FOLLOWING.*

- c. Dust Proof Strike: DP1 (threshold mounting).
- d. Dust Proof Strike: DP2 (floor or threshold mounting).

*USE BELOW FOR EASIER OPERATION AND WHERE INACTIVE LEAF IS NOT REQUIRED FOR EGRESS.*

- B. Constant Latching Flush Bolts: Mortise units, UL listed and rated for indicated application, with automatically retracting bottom bolt, and manually released top bolt when active leaf is opened.

- 1. Manufacturer/Model of Constant Latching Flush Bolts: Provide Ives model numbers indicated or equivalent products of Rockwood or Door Controls International, as follows:

*DELETE INAPPROPRIATE TYPES BELOW.*

- a. Metal Doors: FB51P (includes both top and bottom bolts).
- b. Wood Doors: FB61P (includes both top and bottom bolts).

*SELECT ONE OF THE FOLLOWING*

- c. Dust Proof Strike: DP1 (threshold mounting).
- d. Dust Proof Strike: DP2 (floor or threshold mounting).

*USE BELOW WHERE INACTIVE LEAF IS REQUIRED FOR EGRESS.*

- C. Automatic Flush Bolts: Mortise units, UL listed and rated for indicated application, automatically retracting when active leaf is opened.

- 1. Manufacturer/Model of Automatic Flush Bolts: Provide Ives model numbers indicated or equivalent products of Rockwood or Door Controls International, as follows:

**DELETE INAPPROPRIATE TYPES BELOW.**

- a. Metal Doors: FB31P, (includes both top and bottom bolts).
- b. Wood Doors: FB41P, (includes both top and bottom bolts).

**SELECT ONE OF THE FOLLOWING.**

- c. Dust Proof Strike: DP1 (threshold mounting).
- d. Dust Proof Strike: DP2 (floor or threshold mounting).

**2.17 COORDINATOR**

**DO NOT EDIT WITHOUT PRODUCT CATALOG.**

A. Device coordinating pair of doors with astragals ensuring proper closing sequence. Provide coordinators complete with carry-bar and UL listed and rated for indicated application.

- 1. Manufacturer/Model of Coordinator: Ives model numbers indicated, or equivalent products of Rockwood or Door Controls International, as follows:

**MODEL NUMBERS BELOW ARE FOR TYPICAL APPLICATIONS. CONSULT PRODUCT CATALOG FOR SIZES NOT LISTED BELOW.**

**USE BELOW FOR PAIR OF 2'-6" DOORS IN 5'-0" OPENING OR UNEQUAL PAIR OF DOORS IN 4'-0" OPENING (3'-0" ACTIVE LEAF WITH 1'-0" INACTIVE LEAF).**

- a. Model: COR-42.

**USE BELOW FOR PAIR OF 3'-0" DOORS IN 6'-0" OPENING.**

- b. Model: COR-52.

**USE BELOW FOR PAIR OF 3'-6" DOORS IN 7'-0" OPENING.**

- c. Model: COR-60.

**2.18 TRIM PROTECTOR BARS**

A. Provide type 304 stainless steel bent bar shape fabricated of 3/8-inch thick, 1-1/2-inch wide stock. Fabricate units 12-inches long overall with 4-inch long straight section for under-lever mounting.

**MOST COMMON UNITS LISTED BELOW - OTHER SHAPES AND MOUNTING CONDITIONS ARE AVAILABLE.**

- 1. Manufacturer/Model of Trim Protector Bars: Subject to compliance with requirements provide the following:
  - a. Solid Core Wood Doors: R110LPB; Rockwood Products Incorporated.
  - b. Hollow Metal Doors: R111LPB; Rockwood Products Incorporated.
  - c. Hollow Core Wood Doors: R112LPB; Rockwood Products Incorporated.

**2.19 KICKPLATES**

A. Provide solid metal units as follows:

*SELECT ONE MATERIAL BELOW.*

1. Material: Stainless steel.
2. Material: Brass satin.

*SELECT ONE FINISH BELOW.*

3. Finish: Polished.
4. Finish: Satin.
5. Size: 1 1/2 inches less than door width on push side, 1/2 inch less than door width on pull side, by 8 inches high, by 0.050-inch thick.
6. Manufacturer/Model of Kickplates: EXAMPLE Rockwood K1050 series, 8 inches high or equivalent by any BHMA member.

*THE FOLLOWING PRODUCT IS NOT UL LISTED FOR FIRE RATED DOORS.*

B. Provide non-colored, transparent acrylic plastic units as follows:

1. Size: 1 1/2 inches less than door width on push side, 1/2 inch less than door width on pull side, by 8 inches high, by 1/4 inch thickness.
2. Manufacturer/Model of Kickplates: EXAMPLE Rockwood K4125, 8 inches high or equivalent products by any BHMA member.

**2.20 SWEEP SEALS**

A. Provide manufacturer's standard weatherstripping of type, size and profile indicated, continuous at bottom edges of each indicated door. Provide non-corrosive fasteners.

*SUFFIX BELOW IS FOR CLEAR ANODIZED ALUMINUM FINISH. CHANGE SUFFIX TO "D" FOR DARK BRONZE ANODIZED ALUMINUM.*

1. Manufacturer/Model Sweep Seals: EXAMPLE Pemko; No. 18062CNB, or equivalent products by any BHMA member.

**2.21 JAMB SEALS**

*BELOW FOR STANDARD LIGHT-TIGHT DOORS - CONSIDER INCLUDING THRESHOLD FOR ADDITIONAL LIGHT-TIGHTNESS.*

A. Provide manufacturer's standard weatherstripping of type, size and profile indicated, continuous at head and jamb edges of each indicated door opening. Provide non-corrosive fasteners.

*"CR" SUFFIX BELOW IS FOR CLEAR ANODIZED ALUMINUM FINISH. CHANGE TO "DR" SUFFIX FOR DARK BRONZE ANODIZED ALUMINUM.*

1. Manufacturer/Model Jamb Seals: EXAMPLE Pemko; No. 315CR, or equivalent products by any BHMA member.

*BELOW FOR SOUND-PROOFING - CONSIDER INCLUDING THRESHOLD TO ASSIST SOUND-PROOFING.*

B. Provide manufacturer's standard sound attenuating jamb and head seals of type, size, and profile indicated, continuous at head and jamb edges of scheduled door openings. Provide units with noncorrosive fasteners.

1. Manufacturer/Model: Pemko No. 350 CSR, or equivalent products by any BHMA member.

## 2.22 AUTOMATIC DOOR BOTTOM

*NOTE THAT AUTOMATIC DOOR BOTTOMS CAN INCREASE DOOR OPENING FORCE REQUIREMENTS AND IMPEDE LATCHING IF NOT PROPERLY ADJUSTED. USE ONLY WHEN REQUIRED FOR SOUND ATTENUATION, RODENT ROOMS AND OTHER SPECIFIC APPLICATIONS. TYPICALLY, LIGHT SEALS CAN BE SATISFACTORILY ACCOMPLISHED USING A SWEEP SEAL/THRESHOLD COMBINATION. AVOID SPECIFYING FULLY MORTISED UNITS (DIFFICULT TO MAINTAIN) AND SURFACE MOUNTED UNITS (NOT ADA COMPLIANT)*

A. Provide manufacturer's standard units of type, size and profile indicated, continuous at bottom of indicated door opening. Provide non-corrosive fasteners.

*BELOW IS NON-HANDED SEMI-MORTISED UNIT WITH SPONGE NEOPRENE SEAL. BE SURE TO INCLUDE LOW PROFILE THRESHOLD WHEN SPECIFYING A DOOR BOTTOM OVER CARPET.*

*"C" SUFFIX BELOW IS FOR CLEAR ANODIZED ALUMINUM FINISH. CHANGE TO "D" SUFFIX FOR DARK BRONZE ANODIZED ALUMINUM.*

1. Manufacturer/Model Automatic Door Bottoms: EXAMPLE Semi-mortised Pemko; No. 4301CRL, or equivalent products by any BHMA member.

## 2.23 ELECTRICALLY ACTIVATED HOLD-OPEN DEVICE

*COORDINATE THIS EQUIPMENT WITH ELECTRICAL ENGINEER. ELECTRICAL SHEETS SHOULD SHOW WIRING, CONDUIT AND BOXES REQUIRED FOR AUTOMATIC HOLD-OPEN DEVICES.*

A. Provide units consisting of a silently-operating wall-mounted electromagnet in electrical box with cover plate and door-mounted contact plate. Provide contact plate with swivel adjustment that adjusts to door contact angle indicated on drawings. Provide units that UL and FM listed.

1. Minimum holding force: 25 lbs.
2. Operating Voltage: 24 V. AC.
3. Finish: Brushed zinc on all visible components.

*SELECT ONE OF THE FOLLOWING.*

4. Manufacturer/Model: LCN model SEM7830 (surface-mounted).
5. Manufacturer/Model: LCN model SEM7840 (recessed).

**2.24 THRESHOLDS**

- A. Provide manufacturer's standard, extruded, anodized aluminum units of type, size, and profile indicated, and complying with applicable portions of the Americans with Disabilities Act (ADA). Provide units continuous across bottom of door openings. Provide noncorrosive fasteners.

*MODEL NUMBER BELOW IS FOR A LATCHING PANIC THRESHOLD. LATCHING PANIC THRESHOLDS ARE DESIGNED TO WORK IN CONJUNCTION WITH SURFACE APPLIED VERTICAL ROD EXIT DEVICES. THEY ARE ALSO USED TO PROVIDE A DOOR STOP AND SEAL AT THE BOTTOM OF THE DOOR FOR LIGHT AND SOUND ATTENUATION.*

- 1. Manufacturer/Model: Pemko No. 2005AT, or equivalent products by any BHMA member.

*MODEL NUMBER BELOW IS A LOW PROFILE THRESHOLD FOR USE WITH AN AUTOMATIC DOOR BOTTOM OVER CARPET.*

- 2. Manufacturer/Model: Pemko No. 2364A, or equivalent products by any BHMA member.

*CONSULT MANUFACTURER'S CATALOG FOR OTHER APPLICATIONS: CHANGE IN FLOOR LEVEL, THERMAL BARRIER, ETC*

**2.25 KEYED REMOVABLE MULLION**

- A. Provide steel removable mullion, equipped with space for building standard 7-pin small format interchangeable core. Unit shall self lock upon reinstallation.

- 1. Manufacturer: Subject to compliance with requirements provide products of one of the following:  
Sargent  
Von Duprin

**2.26 CONCEALED POWER TRANSFER**

- A. Provide mortised electric power transfer device that is completely concealed when the door is in the closed position. Device shall be equipped with sufficient number and gage of conductors to accommodate function for hardware specified.

- 1. Manufacturer: Subject to compliance with requirements provide products of one of the following:  
Securitron EPT  
Von Duprin EPT

- B. Armored door cords, electric hinges and other power transfer devices are not permitted.

**2.27 DOOR POSITION SWITCH**

*INCLUDE BELOW FOR ALL ACCESS CONTROL DOORS*

- A. Provide low voltage recessed position sensor with ABS plastic enclosure.

- 1. Manufacturer/Model: GE Sentrol 1078 Series only.

2.28 REQUEST TO EXIT SENSOR

*INCLUDE BELOW FOR ALL ACCESS CONTROL DOORS*

- A. Provide passive infrared detector designed for "request to exit" applications.
  - 1. Manufacturer/Model: Sentrol Scan II-W or Bosch DS-150.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. General: Install each hardware item to comply with manufacturer's printed installation instructions and recommendations for application indicated, unless otherwise indicated by referenced standard or by provisions of this Section.
- B. Hardware Mounting Heights: Door and Hardware Institute "Recommended Locations for Builder's Hardware for Custom Steel Doors and Frames".

*DELETE THE FOLLOWING IF NO NEW HARDWARE INSTALLED ON EXISTING DOORS OR ON NEW DOORS IN EXISTING FRAMES.*

- C. Hardware at Existing Doors and Frames:
  - 1. Match existing hardware preparation heights on door or frame to be reused.

*DELETE THE FOLLOWING PARA AND SUBPARAS IF NEW LOCKSETS OR LATCHSETS ARE NOT INSTALLED IN CONJUNCTION WITH EXISTING FRAMES.*

- 2. Where new locksets are indicated to be installed at openings with an existing door frame, verify the compatibility of the existing strike plate and cut-out locations with the new hardware.
  - a. Where no existing strike exists, or where the new lockset cannot be located at a height matching the existing strike, cut out metal frames and provide new insert tabs, or rout out wood frames, as required to fully mortise the new strike plate.

*DELETE SUBPARA ABOVE OR BELOW IF NOT APPLICABLE TO PROJECT.*

- b. Where an existing strike plate and cut-out is not of suitable size or configuration to ensure proper operation of the lockset, including protection of frame finish, modify or replace strike plate, as practicable. Where new strike plates are required, modify frame as required for a fully mortised installation and install custom-fabricated replacement strike plates to accurately fit within existing mortise cut-outs.

- D. Sound-Attenuating Seals and other Acoustic Barrier Components: Install complete length of door edges, with tight joints to components on adjacent door edges. No gaps at any point around the door perimeter are allowed. Coordinate closer selection and installation (if applicable) to ensure compatibility with seals.
- E. Silencers: Install silencers as follows:
1. Single Door Frames: Install three, equally spaced silencers on the latch jamb of new hollow metal door frames.
- DELETE ABOVE AND BELOW TO SUIT PROJECT.*
2. Double Door Frames: Install two silencers on the head of each new hollow metal double door frame.
- DELETE BELOW IF NOT APPLICABLE, OR MODIFY TO SUIT PROJECT CONDITIONS.*
3. Existing Door Frames: Where new doors are scheduled to be installed in new frames, or where new hardware is scheduled to be installed on existing doors, inspect existing silencers and replace damaged and defective units.
- DELETE BELOW IF NOT APPLICABLE.*
- F. Coordination with access control installation:
1. Exit devices: Existing and new exit devices on access control doors shall not be able to be mechanically dogged. When an existing device is used with an electric strike or when electrifying an existing exit device, provide replacement device case cover without dogging hole.
  2. Electrified exit devices:
    - a. Coordinate installation of electrified exit devices / electrification kits with access control system installation such that system is immediately ready to support electrified locking / unlocking of the device.
    - b. On EL-type devices requiring local power supply, provide label in exit device end cap with the following information regarding power supply location:
      - 1) Room number.
      - 2) Location within room.

### **3.2 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.
- EDIT BELOW TO SUIT PROJECT REQUIREMENTS.*
1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
  2. Door Closers: Adjust sweep period and operating force to comply with accessibility requirements and ensure proper door function.

*NOT REQUIRED FOR MOST SMALL PROJECTS. REVIEW WITH KEY OFFICE,  
CLIENT AND CM IF RETAINED TO ENSURE ENFORCEMENT.*

- B. Hardware Adjustment: Return to project one month after Owner's occupancy, and adjust hardware to proper operation and function. Instruct Owner's personnel in proper maintenance and adjustment.

### 3.3 **HARDWARE SET SCHEDULE**

*EXAMPLE FOLLOWS, REVISE TO SUIT PROJECT.*

- A. Set No. 1:  
Office Lockset  
Butt Hinges (1-1/2 pr.)  
Closer  
Stop
- B. Set No. 2:  
Classroom Lockset  
Butt Hinges (1-1/2 pr.)  
Stop  
Kickplate
- C. Set No. 3:  
Active Leaf  
Classroom Lockset  
Butt Hinges (1-1/2 pr.)  
Closer  
Stop  
Astragal  
Kickplate  
Inactive Leaf  
Automatic Flush Bolts (1 pr.)  
Butt Hinges (1 1/2 pr)  
Closer  
Stop  
Kickplate

**END OF SECTION 08710**