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**SECTION 080671  
DOOR HARDWARE SCHEDULE**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementr

**1.02 SECTION INCLUDES**

- A. Preliminary schedule of door hardware sets for swinging as indicated on drawings.

**1.03 RELATED REQUIREMENTS**

- A. Section 087100 - Door Hardware: Requirements to comply with in coordination with this section.

**1.04 REFERENCE STANDARDS**

- A. BHMA A156.3 - Exit Devices; 2020.
- B. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.
- C. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2022.
- D. BHMA A156.18 - Standard for Materials and Finishes; 2020.
- E. DHI (H&S) - Sequence and Format for the Hardware Schedule; 2019.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Comply with submittal requirements as indicated in Section 087100.
- C. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
- D. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
  - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
  - 2. Provide complete description for each door listed.
  - 3. Provide manufacturer's and product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
  - 4. Include account of abbreviations and symbols used in schedule.
- E. Shop Drawings - Electrified Door Hardware: Submit diagrams for power, signal, and control wiring for electrified door hardware that include details of interface with building safety and security systems. Provide elevations and diagrams for each electrified door opening as follows:
  - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC).
  - 2. Elevations: Submit front and back elevations of each door opening showing electrified devices with connections installed and an operations narrative describing how opening operates from either side at any given time.
  - 3. Diagrams: Submit point-to-point wiring diagram that shows each device in door opening system with related colored wire connections to each device.
- F. Keying Schedule:
  - 1. Submit three (3) copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Only manufacturers listed in Door Hardware Schedule or Section 087100 are considered acceptable, unless noted otherwise.
- B. Obtain each type of door hardware as indicated from a single manufacturer and single supplier.
- C. Manufacturer's Abbreviations: Coordinate with manufacturers listed in Section 087100.
  - 1. BAS - Best Access Systems.
  - 2. RU - Corbin Russwin.
  - 3. HS - HES.
  - 4. LCN - LCN.
  - 5. NOR - Norton.
  - 6. PE - Pemko.
  - 7. RIX - Rixson.
  - 8. RO - Rockwood.
  - 9. SA - Sargent.
  - 10. SCH - Schlage.
  - 11. SU - Securitron.
  - 12. SDC - Stanley Door Closers.
  - 13. TR - Trimco.
  - 14. OT-Other

### **2.02 DESCRIPTION**

- A. Door hardware sets provided represent the design intent, they are only a guideline and should not be considered a detailed or complete hardware schedule.
  - 1. Provide door hardware item(s) as required for similar purposes, even when item is not listed for a door in Door Hardware Schedule.
  - 2. Door hardware supplier is responsible for providing proper size and hand of door for products required in accordance with Door Hardware Schedule and as indicated on drawings.
  - 3. Quantities listed are for each Pair (PR) of doors, or for each Single (SGL) door, as indicated in hardware sets.

### **2.03 LOCK FUNCTION CODES**

- A. Function Codes for Cylindrical Locks: Complying with BHMA A156.5.
- B. Function Codes for Mortise Locks: Complying with BHMA A156.13.
- C. Function Codes for Exit Devices: Complying with BHMA A156.3.

### **2.04 FINISHES**

- A. Finishes: Complying with BHMA A156.18.

## **PART 3 EXECUTION**

### **3.01 DOOR HARDWARE SCHEDULE**

- A. Organize listing of door hardware components within each hardware set in compliance with 10-Part scheduling sequence indicated in DHI (H&S), unless otherwise indicated.

### **3.02 HARDWARE SET # 1: "CLASSROOM 101"**

- A. For use on Door Number(s): 101A & 101B.
- B. Provide for each Single (SGL) door(s).
- C.

4 Hinge (heavy weight)	T4A3786	US26D	MK 087100
1 Fire Rated Rim Exit, Nightlatch	ED5200A 125957ET M110	630	RU 087100
1 Rim Cylinder	Match Owner's existing key system	626	OT 087100
1 Electric Strike	9500	630	HS 087100
1 Smart Pac Bridge Rectifier	2005M3		HS 087100
1 Surface Closer	DC8210 A4	689	RU 087100
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO 087100
1 Gasketing	S88BL		PE 087100
1 Electro Lynx Harness	QC-C1500P (power transfer or electric strike to junction box above)		MK 087100
1 Keypad / Card Reader	Reuse existing		OT 281300
1 Position Switch	DPS-M-BK		SU 087100
1 Motion Sensor	XMS		SU 087100
1 Power Supply	AQL4-R8E1		SU 087100
1 Wiring Diagram	Elevation and Point to Point as Specified		OT

**3.03 HARDWARE SET # [2]: "[CLASSROOM 102]"**

A. For use on Door Number(s): **[102]**.

4 Hinge (heavy weight)	T4A3786	US26D	MK 087100
1 Storeroom Lock	ML2057 125XLC	626	RU 087100
1 Mortise Cylinder	Match Owner's existing key system	626	OT 087100
1 Electric Strike	1500C	630	HS 087100
1 Smart Pac Bridge Rectifier	2005M3		HS 087100
1 Surface Closer	DC8210 A4	689	Ru 087100
1 kick Plate	K1050 10" high CSK BEV	US32D	RO 087100
1 Gasketing	S88BL		PE 087100
1 ElectroLynx Harness	QC-C1500P (power transfer or electric strike to junction box above)		MK 087100
Keypad / Card Reader	Reuse existing		OT 281300
1 Position Switch	DPS-M-BK		SU 087100
1 Motion Sensor	XMS		SU 087100
1 Power Supply	AQL4-R8E1		SU 087100
1 Wiring Diagram	Elevation and Point to Point as Specified		OT

**END OF SECTION 080671**

**SECTION 087100  
DOOR HARDWARE**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

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

**1.02 SECTION INCLUDES**

- A. Hardware for wood doors.
- B. Hardware for fire-rated doors.

**1.03 RELATED REQUIREMENTS**

- A. Section 081113 - Hollow Metal Doors and Frames.
- B. Section 081416 - Flush Wood Doors.

**1.04 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. BHMA (CPD) - Certified Products Directory; Current Edition.
- C. BHMA A156.1 - Standard for Butts and Hinges; 2021.
- D. BHMA A156.3 - Exit Devices; 2020.
- E. BHMA A156.4 - Door Closers and Pivots; 2024.
- F. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.
- G. BHMA A156.6 - Standard for Architectural Door Trim; 2021.
- H. BHMA A156.7 - Template Hinge Dimensions; 2016.
- I. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2022.
- J. BHMA A156.16 - Standard for Auxiliary Hardware; 2023.
- K. BHMA A156.18 - Standard for Materials and Finishes; 2020.
- L. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems; 2023.
- M. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators; 2024.
- N. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames; 2006.
- O. DHI (H&S) - Sequence and Format for the Hardware Schedule; 2019.
- P. DHI (KSN) - Keying Systems and Nomenclature; 2019.
- Q. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.
- R. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- S. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2022.
- T. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- U. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
- V. UL (DIR) - Online Certifications Directory; Current Edition.
- W. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

### **1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
- B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- C. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; attendance is required by affected installers and the following:
  - 1. Architect.
  - 2. Installer's Architectural Hardware Consultant (AHC).
  - 3. Hardware Installer.
  - 4. Owner's Security Consultant.
- D. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
- E. Keying Requirements Meeting:
  - 1. Attendance Required:
    - a. Contractor.
    - b. Owner.
    - c. Installer's Architectural Hardware Consultant (AHC).
  - 2. Agenda:
    - a. Establish keying requirements.
    - b. Verify locksets and locking hardware are functionally correct for project requirements.
    - c. Verify that keying and programming complies with project requirements.
    - d. Establish keying submittal schedule and update requirements.
  - 3. Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following:
    - a. Access control requirements.
    - b. Key control system requirements.
    - c. Flow of traffic and extent of security required.
  - 4. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.
  - 5. Deliver established keying requirements to manufacturers.

### **1.06 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
- C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
  - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
  - 2. Comply with DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
  - 3. List groups and suffixes in proper sequence.
  - 4. Provide complete description for each door listed.
  - 5. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
  - 6. Include account of abbreviations and symbols used in schedule.

- D. Shop Drawings - Electrified Door Hardware: Submit diagrams for power, signal, and control wiring for electrified door hardware that include details of interface with building safety and security systems. Provide elevations and diagrams for each electrified door opening as follows:
  - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC).
  - 2. Elevations: Submit front and back elevations of each door opening showing electrified devices with connections installed and an operations narrative describing how opening operates from either side at any given time.
  - 3. Diagrams: Submit point-to-point wiring diagram that shows each device in door opening system with related colored wire connections to each device.
- E. Keying Schedule:
  - 1. Submit three (3) copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated.
- F. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Lock Cylinders: Ten for each master keyed group.

#### **1.07 QUALITY ASSURANCE**

- A. Standards for Fire-Rated Doors: Maintain one copy of each referenced standard on site, for use by Architect and Contractor.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.
- D. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

#### **1.09 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
  - 1. Closers: Five years, minimum.
  - 2. Exit Devices: Three years, minimum.
  - 3. Locksets and Cylinders: Three years, minimum.
  - 4. Other Hardware: Two years, minimum.

### **PART 2 PRODUCTS**

#### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
- B. Provide individual items of single type, of same model, and by same manufacturer.
- C. Provide door hardware products that comply with the following requirements:
  - 1. Applicable provisions of federal, state, and local codes.
  - 2. Accessibility: ADA Standards and ICC A117.1.

3. Applicable provisions of NFPA 101.
  4. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
  5. Listed and certified compliant with specified standards by BHMA (CPD).
- D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. See Door Hardware Schedule.
- E. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
    - a. Aluminum fasteners are not permitted.
    - b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
  2. Fire-Rated Applications: Comply with NFPA 80.
    - a. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
    - b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

## 2.02 BUTT HINGES

- A. Manufacturers:
1. McKinney; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. Hager Companies: [www.hagerco.com/#sle](http://www.hagerco.com/#sle).
  3. Stanley, dormakaba Group: [www.stanleyhardwarefordoors.com/#sle](http://www.stanleyhardwarefordoors.com/#sle).
  4. **Substitutions: See Section 016000 - Product Requirements.**
- B. Hinges: Comply with BHMA A156.1, Grade 1.
1. Provide hinges on every swinging door.
  2. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
  3. Provide ball-bearing hinges at each door with closer.
  4. Provide non-removable pins on interior outswinging doors at locations as indicated.
  5. Provide following quantity of butt hinges for each door:
    - a. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

## 2.03 EXIT DEVICES

- A. Manufacturers:
1. **Corbin Russwin, Sargent, or Yale; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).**
  2. Von Duprin, an Allegion brand: [www.allegion.com/us/#sle](http://www.allegion.com/us/#sle).
  3. Sargent Manufacturing
  4. **Substitutions: See Section 016000 - Product Requirements.**
- B. Exit Devices: Comply with BHMA A156.3, Grade 1.
1. Lever design to match lockset trim.
  2. Provide cylinder with cylinder dogging or locking trim.
  3. Provide exit devices properly sized for door width and height.
  4. Provide strike as recommended by manufacturer for application indicated.
  5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

## 2.04 ELECTRIC STRIKES

- A. Manufacturers:

1. Best (Vantage Lock), keypad or magnetic stripe function
  2. **Substitutions: See Section 016000 - Product Requirements.**
- B. Electric Strikes: Comply with BHMA A156.31, Grade 1.
1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.
  2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.

## 2.05 LOCK CYLINDERS

- A. Manufacturers:
1. Best, dormakaba Group; 7A / 9A series: [www.bestaccess.com/#sle](http://www.bestaccess.com/#sle).
  2. Corbin/Ruswin Architectural Hardware
  3. Substitutions: Not permitted.
- B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
1. Provide small format interchangeable core (SFIC) type cylinders, Grade 1, with seven-pin core in compliance with BHMA A156.5 at locations indicated.
  2. Provide cylinders from same manufacturer as locking device.
  3. Provide cams and/or tailpieces as required for locking devices.

## 2.06 MORTISE LOCKS

- A. Manufacturers:
1. Corbin Ruswin; an Assa Abloy Group company; 2000 series: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. Best, dormakaba Group; 7K: [www.bestaccess.com/#sle](http://www.bestaccess.com/#sle).
- B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
1. Latchbolt Throw: 3/4 inch (19 mm), minimum.
  2. Deadbolt Throw: 1 inch (25.4 mm), minimum.
  3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
  4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
    - a. Finish: To match lock or latch.

## 2.07 DOOR PULLS AND PUSH PLATES

- A. Manufacturers:
1. Rockwood; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. Hager Companies: [www.hagerco.com/#sle](http://www.hagerco.com/#sle).
  3. Hiawatha, Inc, division of Activar Construction Products Group, Inc: [www.activarcpg.com/hiawatha/#sle](http://www.activarcpg.com/hiawatha/#sle).
  4. Baldwin Hardware
  5. Glynn-Johnson
  6. Substitutions: Not permitted.
- B. Door Pulls and Push Plates: Comply with BHMA A156.6.
1. Pull Type: Straight, unless otherwise indicated.
  2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
    - a. Edges: Beveled, unless otherwise indicated.
  3. Material: Aluminum, unless otherwise indicated.

## 2.08 DOOR PULLS AND PUSH BARS

- A. Manufacturers:
1. Rockwood; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. Hager Companies: [www.hagerco.com/#sle](http://www.hagerco.com/#sle).

3. Hiawatha, Inc, division of Activar Construction Products Group, Inc:  
[www.activarcpg.com/hiawatha/#sle](http://www.activarcpg.com/hiawatha/#sle).
  4. Baldwin Hardware
  5. Glynn-Johnson
  6. Substitutions: Not permitted.
- B. Door Pulls and Push Bars: Comply with BHMA A156.6.
1. Bar Type: Bar set, unless otherwise indicated.
  2. Material: Aluminum, unless otherwise indicated.

## 2.09 CLOSERS

- A. Manufacturers; Surface Mounted:
1. Corbin Russwin or Norton; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. LCN, an Allegion brand: [www.allegion.com/us/#sle](http://www.allegion.com/us/#sle).
  3. Substitutions: Not permitted.
- B. Closers: Comply with BHMA A156.4, Grade 1.
1. Type: Surface mounted to door.
  2. Provide door closer on each exterior door.

## 2.10 KICK PLATES

- A. Manufacturers:
1. Hiawatha, Inc, an Activar Construction Products Group company:  
[www.activarcpg.com/hiawatha/#sle](http://www.activarcpg.com/hiawatha/#sle).
  2. Baldwin Hardware
  3. Glynn-Johnson
  4. Hager
  5. Rockwood Architectural
  6. Ives
- B. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
1. Size: 8 inch (203 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

## 2.11 FLOOR STOPS

- A. Manufacturers:
1. Rockwood; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  2. Hager Companies: [www.hagerco.com/#sle](http://www.hagerco.com/#sle).
  3. Hiawatha, Inc, division of Activar Construction Products Group, Inc:  
[www.activarcpg.com/hiawatha/#sle](http://www.activarcpg.com/hiawatha/#sle).
  4. Baldwin Hardware
  5. Glynn-Johnson
  6. Ives
  - 7.
- B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
1. Provide floor stops when wall surface is not available; be cautious not to create a tripping hazard.
  2. Type: Manual hold-open, with pencil floor stop.
  3. Material: Aluminum housing with rubber insert.

## 2.12 WALL STOPS

- A. Manufacturers:
  - 1. Rockwood; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  - 2. Hager Companies: [www.hagerco.com/#sle](http://www.hagerco.com/#sle).
  - 3. Hiawatha, Inc, division of Activar Construction Products Group, Inc: [www.activarcpg.com/hiawatha/#sle](http://www.activarcpg.com/hiawatha/#sle).
  - 4. Baldwin Hardware
  - 5. Ives
- B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
  - 1. Provide wall stops to prevent damage to wall surface upon opening door.
  - 2. Type: Bumper, concave, wall stop.
  - 3. Material: Aluminum housing with rubber insert.

## 2.13 SILENCERS

- A. Manufacturers:
  - 1. Ives, an Allegion brand: [www.allegion.com/us/#sle](http://www.allegion.com/us/#sle).
  - 2. Rockwood; an Assa Abloy Group company: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  - 3. Baldwin Hardware
  - 4. Glynn-Johnson
  - 5. Hager
  - 6. Rockwood Architectural
- B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
  - 1. Single Door: Provide three on strike jamb of frame.
  - 2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
  - 3. Material: Rubber, gray color.

## 2.14 KEY CONTROL SYSTEMS

- A. Key Control Systems: Comply with guidelines of BHMA A156.28.
  - 1. Provide keying information in compliance with DHI (KSN) standards.
  - 2. Keying: Grand master keyed.
  - 3. Include construction keying and control keying with removable core cylinders.
  - 4. Key to existing keying system.
  - 5. Supply keys in quantities as required by owner.
    - a. 1 each Grand Master keys.
    - b. 6 each Construction Master keys.
    - c. 15 each Construction keys.
    - d. 2 each Construction Control keys.
    - e. 2 each Control keys if new system.

## 2.15 FINISHES

- A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
  - 1. Primary Finish: 625; bright chromium plated over nickel, with brass or bronze base material (former US equivalent US26); BHMA A156.18.
  - 2. Secondary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
    - a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
- C. Use templates provided by hardware item manufacturer.
- D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list, unless noted otherwise on drawings.
- E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

### **3.02 FIELD QUALITY CONTROL**

- A. Perform field inspection and testing under provisions of Section 014000 - Quality Requirements.

### **3.03 ADJUSTING**

- A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

### **3.04 CLEANING**

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

### **3.05 PROTECTION**

- A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

**END OF SECTION 087100**

**SECTION 122400  
WINDOW SHADES**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

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

**1.02 SECTION INCLUDES**

- A. Interior motorized roller shades.
- B. Motor controls.

**1.03 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.
- B. **Section 079200- Joint Sealants**
- C. **Section 092116 - Gypsum Board Assemblies**
- D. **Division 26 Electrical**

**1.04 REFERENCE STANDARDS**

- A. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2023, with Errata.

**1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades to provide rough-in of electrical wiring as required for installation of hardwired motorized shades.
- B. Sequencing:
  - 1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
  - 2. Do not install shades until final surface finishes and painting are complete.

**1.06 SUBMITTALS**

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
  - 1. Motorized Shades: Include power requirements and standard wiring diagrams for specified products.
- B. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.
- C. Selection Samples: Include fabric samples in full range of available colors and patterns.
  - 1. Motorized Shades: Include finish selections for controls.
- D. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.

**1.07 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

- B. Installer Qualifications: Company specializing in performing work of this type with minimum five years of documented experience with shading systems of similar size and type.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
- B. Handle and store shades in accordance with manufacturer's recommendations.

#### **1.09 FIELD CONDITIONS**

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### **1.10 WARRANTY**

- A. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:
  - 1. Shade Hardware: One year.
  - 2. Electric Motors: One year.
  - 3. Electronic Control Equipment: One year.
  - 4. Fabric: One year.
  - 5. Aluminum and Steel Coatings: One year.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Interior Motorized Roller Shades, Motors and Motor Controls:
  - 1. Draper, Inc; Motorized FlexShade: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  - 2. MechoShade Systems LLC; UrbanShade Double Roller - Motorized: [www.mechoshade.com/#sle](http://www.mechoshade.com/#sle).
  - 3. SWFcontract, a division of Springs Window Fashions, LLC: [www.swfcontract.com/#sle](http://www.swfcontract.com/#sle).
  - 4. **Openlight , creativewindowscommercial.com**
  - 5. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 ROLLER SHADES**

- A. General:
  - 1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
  - 2. Provide shade system that operates smoothly when shades are raised or lowered.
- B. Roller Shades Type RS-1 as indicated on drawings :
  - 1. Description - Interior Roller Shades: Double roller, motor operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories.
    - a. Drop Position: Regular roll.
    - b. Roll Direction: Roll down, closed position is at window sill.
    - c. Mounting: Ceiling mounted.
    - d. Size: As indicated on drawings.
    - e. Fabric: As indicated under Shade Fabric article.
  - 2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
    - a. Double Roller Brackets: Configured for light-filtering and room-darkening shades in one opening.
  - 3. Roller Tubes: As required for type of shade operation.
    - a. Material: Extruded aluminum, clear anodized finish.
    - b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.

- c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge.
- 4. Hembars: Designed to maintain bottom of shade straight and flat.
  - a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
- 5. Accessories:
  - a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; clear anodized finish.
    - 1) Color: White.
    - 2) Profile: Square.
  - b. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets.
  - c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

### **2.03 SHADE FABRIC**

- A. Fabric: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
  - 1. Manufacturers:
    - a. Dual Roller Flexshade with Pocket Headbox c/w closure Panel
    - b. Substitutions: See Section 016000 - Product Requirements.
  - 2. Material: Vinyl coated polyester.
  - 3. Performance Requirements:
    - a. Flammability: Pass NFPA 701 large and small tests.
  - 4. Openness Factor: Double roll- Blackout and 1%.
  - 5. Color: White.

### **2.04 MOTOR CONTROLS**

- A. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the control intent indicated.
- B. Provide all components and connections necessary to interface with other systems as indicated.
- C. Manual Controls:
  - 1. Control Functions:
    - a. Open: Automatically open controlled shade(s) to fully open position when button is pressed.
    - b. Close: Automatically close controlled shade(s) to fully closed position when button is pressed.
    - c. Raise: Raise controlled shade(s) only while button is pressed.
    - d. Lower: Lower controlled shade(s) only while button is pressed.
    - e. Presets: For selection of predetermined shade positions.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine finished openings for deficiencies that may preclude satisfactory installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Start of installation shall be considered acceptance of substrates.

**3.02 PREPARATION**

- A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- B. Coordinate with window installation and placement of concealed blocking to support shades.

**3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.
- B. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

**3.04 CLEANING**

- A. Clean soiled shades and exposed components as recommended by manufacturer.
- B. Replace shades that cannot be cleaned to "like new" condition.

**3.05 PROTECTION**

- A. Protect installed products from subsequent construction operations.

**END OF SECTION 122400**