



DATE: August 25, 2023

ADDENDUM NO: ONE

PROJECT NO: Bid Number 24-33

PROJECT DESCRIPTION: Door, Frames and Hardware
Supply and Installation Services

This Addendum is hereby made part of the Contract Documents of the above named Project. It supplements and modifies them as follows:

Specifications:

1. Replace entirely Section 087100, DOOR HARDWARE with the attached new Section 087100, DOOR HARDWARE consisting of 13 pages.

Drawings:

1. NONE

END ADDENDUM NUMBER ONE

(This Addendum consists of 14 pages)

SECTION 087100 DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hardware for wood, FRP, and hollow metal doors.
- B. Hardware for fire-rated doors.
- C. Electrically operated and controlled hardware.
- D. Low Energy Power Automatic Operators
- E. Thresholds.
- F. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealants for setting exterior door thresholds.
- B. Section 080671 - Door Hardware Schedule: Schedule of door hardware sets.
- C. Section 081113 - Hollow Metal Doors and Frames.
- D. Section 081416 - Flush Wood Doors.
- E. Section 081613 - Fiberglass Doors.
- F. Section 284600 - Fire Detection and Alarm: Electrical connection to activate door closers.

1.03 REFERENCE STANDARDS

- A. BHMA A156.1 - Standard for Butts and Hinges 2021.
- B. BHMA A156.2 - Bored and Preassembled Locks and Latches 2022.
- C. BHMA A156.3 - Exit Devices 2020.
- D. BHMA A156.4 - Door Controls - Closers 2019.
- E. BHMA A156.5 - Cylinders and Input Devices for Locks 2020.
- F. BHMA A156.6 - Standard for Architectural Door Trim 2021.
- G. BHMA A156.7 - Template Hinge Dimensions 2016.
- H. BHMA A156.8 - Door Controls - Overhead Stops and Holders 2021.
- I. BHMA A156.13 - Mortise Locks & Latches Series 1000 2022.
- J. BHMA A156.15 - Release Devices - Closer Holder, Electromagnetic and Electromechanical 2021.
- K. BHMA A156.16 - Auxiliary Hardware 2018.
- L. BHMA A156.17 - Self Closing Hinges & Pivots 2019.
- M. BHMA A156.18 - Materials and Finishes 2020.
- N. BHMA A156.21 - Thresholds 2019.
- O. BHMA A156.22 - Standard for Gasketing 2021.
- P. BHMA A156.26 - Standard for Continuous Hinges 2021.
- Q. BHMA A156.30 - High Security Cylinders 2020.
- R. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators 2019.
- S. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames 2004.
- T. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors 1993; also in WDHS-1/WDHS-5 Series, 1996.
- U. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2019.

- V. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022.
- W. UL (DIR) - Online Certifications Directory Current Edition.
- X. UL 437 - Standard for Key Locks Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
- B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 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. Provide complete description for each door listed.
- 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.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least five years of documented experience.
- C. Supplier Qualifications: Supplier for all door hardware as specified in this section and as itemized in Section 080671 Door Hardware Schedule shall be provided by Overhead Door Company of St. Louis a Division of DH Pace Company.
 - 1. Contact Information: Pat Arman, Office 314-781-5200, Mobile 314-314-220-6813, E-mail: Pat.Arman@dhpace.com.

1.07 INSPECTION AND TESTING

- A. Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80.
 - 1. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
 - 2. Report to include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies.

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. Locksets and Cylinders: Three years, minimum.
 - 3. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 HINGES

- A. Manufacturers:
 - 1. McKinney; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Hager Companies: www.hagerco.com.
 - 3. Stanley; Black and Decker; sss.stanleyblackanddecker.com
 - 4. Models:
 - a. Interior doors 36" wide and less, standard weight steel:
 - 1) Hager, BB1279.
 - 2) McKinney, TA2714.
 - 3) Stanley, FBB179
 - b. Swing clear at double egress, heavy weight steel:
 - 1) Hager, BB1262.
 - 2) McKinney, T4A3795.
 - 3) Stanley FBB TBA
 - c. Corrosive area doors 36" wide and less, standard weight stainless steel:
 - 1) Hager, BB1191.
 - 2) McKinney, TA2314.
 - 3) Stanley, FBB 191
- B. Substitutions: Not permitted.
- C. Hinges: Comply with BHMA A156.1, Grade 1.
 - 1. Self Closing Hinges: Comply with BHMA A156.17.
 - 2. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
 - a. Provide hinge width required to clear surrounding trim.
 - 3. Continuous Hinges: Comply with BHMA A156.26.
 - 4. Provide hinges on every swinging door.
 - 5. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
 - 6. Provide ball-bearing hinges at each door with closer.
 - 7. Provide non-removable pins on exterior outswinging doors.
 - 8. Provide following quantity of butt hinges for each door:
 - a. Doors up to 60 inches High: Two hinges.
 - b. Doors From 60 inches High up to 90 inches High: Three hinges.
 - c. Doors 84 inches High and over: Butt hinges not allowed, use continuous gear type hinge.
 - d. Doors 36 inches Wide and over: Butt hinges not allowed, use continuous gear type hinge.

2.02 HINGES, CONTINUOUS GEAR TYPE

- A. Manufacturers:
 - 1. Assa Abloy- McKinney or Pemko: www.assaabloydss.com.
 - 2. Hager Companies Roton: www.hagerco.com.
 - 3. Stanley: www.stanleysecuritysolutions.com.
 - 4. Models:
 - a. For new frames:
 - 1) McKinney, MCK-25HD.

- 2) Pemko, FMHD.
- 3) Roton, 780-224HD
- 4) Stanley, 661 HD
- b. For retrofits to existing frames:
 - 1) McKinney, MCK-54D.
 - 2) Pemko, HSHD1.
 - 3) Roton, 780-053HD.
 - 4) Stanley, 661 HD
- 5. Substitutions: Not permitted.

2.03 PIVOTS

- A. Manufacturers:
 - 1. McKinney or Rixson; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. DORMA USA, Inc; LM Series: www.dorma.com/#sle.
 - 3. Ives, an Allegion brand: www.allegion.com/us.
 - 4. Substitutions: Not permitted.
- B. Center-Hung and Offset Pivots: Comply with BHMA A156.4.
- C. Self-Closing Pivots: Comply with BHMA A156.17.
- D. Door Weight: Medium; standard openings with up to 650 lbs door weight.

2.04 FLUSHBOLTS AND COORDINATORS

- A. Manufacturers:
 - 1. Rockwood, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Hager Companies: www.hagerco.com.
 - 3. Ives, an Allegion brand: www.allegion.com/us.
 - 4. Trimco: www.trimcohardware.com.
 - 5. Models:
 - a. Automatic at hollow metal door:
 - 1) Ives, FB31P.
 - 2) Rockwood, 2842.
 - 3) Trimco, 3810.
 - 4) Hager 292D
 - b. Manual at hollow metal door:
 - 1) Ives, FB358.
 - 2) Rockwood, 550.
 - 3) Trimco, 3917.
 - 4) Hager 282D
 - c. Automatic at wood doors:
 - 1) Ives, FB41P.
 - 2) Rockwood, 2942.
 - 3) Trimco, 3815.
 - 4) Hager 291D
 - d. Manual at wood doors:
 - 1) Ives, FB457.
 - 2) Rockwood, 557.
 - 3) Trimco, 3913.
 - 4) Hager 283D
 - e. Dustproof strike at floor bolts:
 - 1) Ives, DP2.
 - 2) Rockwood, 570.
 - 3) Trimco, 3910.
 - 4) Hager 280X.
 - 6. Substitutions: Not permitted.

- B. Flush Bolts: Comply with BHMA A156.16, Grade 1.
 - 1. Flush Bolt Throw: 3/4 inch, minimum.
 - 2. Provides extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
 - a. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
 - 3. Provide dustproof floor strike for bolt into floor, except at metal thresholds.
 - 4. Automatic Flush Bolts: Automatically latch upon closing of door; automatic retraction of bolts when active leaf is opened; located on inactive leaf of pair of doors.

2.05 EXIT DEVICES

- A. Manufacturers:
 - 1. Corbin Russwin, Sargent, or Yale; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Von Duprin, an Allegion brand: www.allegion.com/us.
 - 3. Models:
 - a. Corbin Russwin, ED5000 series, PR lever type.
 - b. Von Duprin, XP98 series, 17 lever type.
 - c. Sargent, 80 Series, P lever type.
 - 4. Substitutions: Not permitted.
- 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 less bottom rod (LBR) at scheduled locations to eliminate use of floor mounted strikes.
 - 6. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.
 - 7. For electrical options, provide quick connect plug-in pre-wired connectors.

2.06 ACCESS CONTROL LOCKS

- A. WiFi 802.11 proximity card reader access control lock with exterior trim plate and exit device.
- B. Manufacturer - Access Control Lock and Exit Device:
 - 1. Assa Abloy Brands; Sargent: www.assaabloydss.com.
 - 2. Must be provided and installed by a manufacturer's certified integrator.
 - 3. Model: 12-70-IN120-8877-IP-B-#-ET-P-32D-###-##
 - a. # = bar length:
 - 1) E is 24 inches to 32 inches, no cutting for 32 inches.
 - 2) F is 33 inches to 36 inches, no cutting for 36 inches.
 - 3) J is 37 inches to 42 inches, no cutting for 42 inches.
 - 4) G is 43 inches to 48 inches, no cutting for 48 inches.
 - b. ## = door width in inches
 - c. ### = hand:
 - 1) RHR is right hand reversed.
 - 2) LHR is left hand reversed.
- C. Manufacturer - Exterior Trim

2.07 ELECTRIC STRIKES

- A. Manufacturers:
 - 1. Adams Rite, HES, or Securitron; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Von Duprin, an Allegion brand: www.allegion.com/us.
 - 3. Models:

- a. For cylindrical locksets:
 - 1) Folger Adam EDC, 310.
 - 2) HES, 1006.
 - 3) Hager, 2925.
 - b. For rim exit device:
 - 1) Folger Adam EDC, 310.
 - 2) HES, 9600.
 - 3) Securitron, UNL.
 - 4) Hager, 2928.
- 4. 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.
 - 3. Provide field selectable Fail Safe/Fail Secure modes.
 - 4. Provide transformer and rectifier as necessary for complete installation.
 - 5. Connect electric strikes into fire alarm where non-rated doors are scheduled to release with fire or sprinkler alarm condition.

2.08 LOCK CYLINDERS

- A. Manufacturers:
 - 1. Best Access Systems, division of Stanley Access Technologies LLC:
www.bestaccess.com.
 - 2. Substitutions: Not permitted.
- B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
 - 1. Provide standard type cylinders, Grade 1, with seven-pin core in compliance with BHMA A156.5 at locations indicated.
 - 2. Provide high security mechanical type cylinders, Grade 1, with seven-pin core in compliance with BHMA A156.30 or UL 437 at locations indicated.
 - 3. Provide cylinders from same manufacturer as locking device.
 - 4. Provide cams and/or tailpieces as required for locking devices.
 - 5. Within specific Door Sections, when provisions for lock cylinder are being referenced to this Section, provide specified lock cylinder and keyed to building keying system, unless otherwise indicated.

2.09 CYLINDRICAL LOCKS

- A. Manufacturers:
 - 1. Best Access Systems, division of Stanley Access Technologies LLC:
www.bestaccess.com.
 - 2. Model: Series 9K37-[Function]-14LS3626
 - 3. Substitutions: Not permitted.
- B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
 - 1. Bored Hole: 2-1/8 inch diameter.
 - 2. Latchbolt Throw: 1/2 inch, minimum.
 - 3. Backset: 2-3/4 inch 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.
 - 5. Provide a lock for each door, unless otherwise indicated that lock is not required.
 - 6. Provide an intruder lockset for swinging door where hardware set is not indicated.
 - 7. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.

2.10 MORTISE LOCKS

- A. Manufacturers:

1. Best Access Systems, division of Stanley Access Technologies LLC; [Series 45H7-Function -14S626- [Door Hand]-LC.]: www.bestaccess.com.
 2. Substitutions: Not permitted.
- B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
1. Latchbolt Throw: 3/4 inch, minimum.
 2. Deadbolt Throw: 1 inch, minimum.
 3. Backset: 2-3/4 inch 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.

2.11 DOOR PULLS AND PUSH PLATES

- A. Manufacturers:
1. Rockwood or McKinney; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. Trimco: www.trimcohardware.com.
 4. Models:
 - a. Push Plate:
 - 1) McKinney, P054.
 - 2) Rockwood, 70E.
 - 3) Trimco, 1001-9
 - 4) Hager 30S
 - b. Pull Plate:
 - 1) McKinney, DP803
 - 2) Rockwood, 111 x 70C
 - 3) Trimco, 1018-3B
 - 4) Hager 33G
 5. 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: Stainless steel, unless otherwise indicated.
 4. Provide door pulls and push plates on doors without a lockset, latchset, exit device, or auxiliary lock unless otherwise indicated.
 5. On solid doors, provide matching door pull and push plate on opposite faces.

2.12 DOOR PULLS AND PUSH BARS

- A. Manufacturers:
1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. Trimco: www.trimcohardware.com.
 4. Substitutions: Not permitted.
- B. Door Pulls and Push Bars: Comply with BHMA A156.6.
1. Bar Type: Bar set, unless otherwise indicated.
 2. Material: Stainless steel, unless otherwise indicated.

2.13 COORDINATORS

- A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us.
 2. Trimco: www.trimcohardware.com.
 3. Hager Companies; www.hagerco.com.
 4. Models:
 - a. Ives, CORG

- b. Trimco, 3093
 - c. Hager 298D
- 5. Substitutions: Not permitted.
- B. Coordinators: Provide on doors having closers and self-latching or automatic flush bolts to ensure that inactive door leaf closes before active door leaf.
 - 1. Type: Bar, unless otherwise indicated.
 - 2. Material: Stainless steel, unless otherwise indicated.
 - 3. Ensure that coordination of other door hardware affected by placement of coordinators and carry bar is applied properly for completely operable installation.

2.14 CLOSERS

- A. Manufacturers; Surface Mounted:
 - 1. Norton; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. LCN, an Allegion brand: www.allegion.com/us/#sle.
 - 3. Stanley; www.stanleysecuritysolutions.com.
 - 4. Models:
 - a. Interior doors with multi-size tri-style packaging:
 - 1) Norton, 7500 Delayed Action
 - 2) LCN, 4040XP Delayed Action
 - 3) Stanley, D4550MCCS Delayed Action
 - b. Exterior doors with heavy duty non-hold open parallel arm with spring-stop:
 - 1) Norton, 7500 CPS Delayed Action
 - 2) LCN, 4040XP-CUSH Delayed Action
 - 3) Stanley, D4550MCCS Delayed Action
 - 5. 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.
 - 3. Provide door closer on each fire-rated and smoke-rated door.
 - a. Spring hinges are not an acceptable self-closing device, unless otherwise indicated.
 - 4. Where an overlapping astragal is included on pairs of swinging doors, provide coordinator to ensure door leaves close in proper order.
 - 5. At corridor entry doors, mount closer on room side of door.
 - 6. At outswinging exterior doors, mount closer on interior side of door.

2.15 LOW ENERGY POWER AUTOMATIC OPERATORS

- A. Electrified Automatic Operators: ADA compliant type.
- B. Provide wireless wall mounted actuators by same manufacturer.
- C. Provide weather resistant actuators for exterior locations.
- D. Operator motor voltage shall be 120 VAC.
- E. Provide extended cover over operator at double door openings.
- F. Provide ADA accessible symbols engraved on actuators and stickers on doors in accordance with ANSI A-117.1.
- G. Manufacturers:
 - 1. Assa Abloy: www.assaabloy.com
 - 2. Models:
 - a. Assa Abloy, Besam SW200i.
 - 3. Substitutions: Not permitted.

2.16 OVERHEAD STOPS AND HOLDERS

- A. Manufacturers:
 - 1. Rixson or Sargent; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Glynn-Johnson, an Allegion brand: www.allegion.com/us/#sle.

3. Hager Companies: www.hagerco.com.
 4. Models:
 - a. Heavy duty surface:
 - 1) Rixson, 9.
 - 2) Sargent, 590.
 - 3) Glynn-Johnson, 90.
 - 4) Hager 70 Series SRF
 - b. Heavy duty concealed:
 - 1) Rixson, 1.
 - 2) Sargent, 690.
 - 3) Glynn-Johnson, 100.
 - 4) Hager 70 Series CON
 5. Substitutions: Not permitted.
- B. Overhead Stops and Holders (Door Checks): Comply with BHMA A156.8, Grade 1.
1. Provide stop for every swinging door, unless otherwise indicated.
 2. Stop is not required if positive stop feature is specified for door closer; positive stop feature of door closer is not an acceptable substitute for a stop, unless otherwise indicated.

2.17 PROTECTION PLATES

- A. Protection Plates: Comply with BHMA A156.6.
- B. Edges: Beveled, on four sides unless otherwise indicated.
- C. Fasteners: Countersunk screw fasteners.
- D. Provide clear anti-microbial coating that is silver ion-based.
- E. Drip Guard: Provide at head of exterior doors unless covered by roof or canopy.
 1. Manufacturers - Drip Guard:
 - a. Assa Abloy McKinney or Pemko: www.assaabloydss.com.
 - b. National Guard Products, Inc: www.ngpinc.com.
 - c. Models:
 - 1) McKinney, MCK346C.
 - 2) National Guard, 16AD.
 - 3) Pemko, 346C.
 - d. Substitutions: See Section 016000 - Product Requirements

2.18 KICK PLATES

- A. Manufacturers:
 1. Trimco: www.trimcohardware.com.
 2. McKinney or Rockwood an Assa Abloy Company: www.assaabloydss.com
 3. Hager Companies: www.hagerco.com
 4. Models:
 - a. McKinney, KP50.
 - b. Rockwood, K1050.
 - c. Hager 194S
 - d. Trimco, K0050.
 5. Substitutions: Not permitted.
- 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. Thickness: 0.050 inch minimum.
 2. Height: 10 inches unless otherwise indicated.
 3. Width:
 - a. Single doors: 1-1/2 inch less than door width on frame stop face and 1 inch less than door width on opposite face.
 - b. Double doors: 1 inch less than door width on both faces of each door.

4. Bevel all four edges and countersink holes for fasteners.
5. Provide UL listed kickplates where required on fire-rated doors.

2.19 DOOR HOLDERS

- A. Manufacturers:
 1. McKinney or Rockwood; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
 2. Hager Companies; _____: www.hagerco.com/#sle.
 3. Glynn-Johnson, an Allegion brand: www.allegion.com/us.
 4. Models:
 5. Substitutions: See Section 016000 - Product Requirements.
- B. Door Holders: Comply with BHMA A156.16, Grade 1.
 1. Type: Lever, or kick down stop, with rubber bumper at bottom end.
 2. Material: Aluminum.

2.20 ELECTROMAGNETIC DOOR HOLDERS

- A. Manufacturers:
 1. Rixson; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. Models:
 4. Substitutions: See Section 016000 - Product Requirements.
- B. Electromagnetic Door Holders: Comply with BHMA A156.15.
 1. Type: Wall mounted, single unit, standard duty, with strike plate attached to door.
 2. Holding Force, Standard Duty: 40 lbs-force, minimum.
 3. Voltage: 12 VDC, and provide power supplies by same manufacturer as holders.
 4. Fail safe; door released to close automatically when electrical current is interrupted.
 5. Provide interface with fire detectors and fire-alarm system for fire-rated door assemblies.

2.21 FLOOR STOPS

- A. Manufacturers:
 1. Rockwood or McKinney; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. Trimco: www.trimcohardware.com.
 4. Ives, an Allegion brand: www.allegion.com/us.
 5. Models:
 6. Substitutions: See Section 016000 - Product Requirements.
- 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 dome floor stop.
 3. Material: Stainless steel housing with rubber insert.

2.22 WALL STOPS

- A. Manufacturers:
 1. Rockwood or McKinney; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. Trimco: www.trimcohardware.com.
 4. Ives, an Allegion brand: www.allegion.com/us.
 5. Models:
 - a. Wall Stop:
 - 1) McKinney, WS04.
 - 2) Rockwood, 403.
 - 3) Hager, 232W
 - 4) Trimco, 1276CCS.

- 5) Ives, WS402CCV.
6. Substitutions: See Section 016000 - Product Requirements.
- 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: Stainless steel housing with rubber insert.

2.23 ASTRAGALS

- A. Manufacturers:
 1. Pemko; an Assa Abloy Group company: www.assaabloydss.com.
 2. Hager Companies: www.hagerco.com.
 3. National Guard Products, Inc: www.ngpinc.com.
 4. Substitutions: See Section 016000 - Product Requirements.
- B. Astragals: Comply with BHMA A156.22.
 1. Type: Split, two parts, and with sealing gasket.
 2. Material: Stainless steel.
 3. Provide non-corroding fasteners at exterior locations.

2.24 THRESHOLDS

- A. Manufacturers:
 1. Pemko or McKinney; an Assa Abloy Group company: www.assaabloydss.com.
 2. National Guard Products, Inc: www.ngpinc.com.
 3. Models:
 4. Substitutions: See Section 016000 - Product Requirements.
- B. Thresholds: Comply with BHMA A156.21.
 1. Provide threshold at each exterior door, unless otherwise indicated.
 2. Type: Flat surface.
 3. Material: Aluminum.
 4. Threshold Surface: Fluted horizontal grooves across full width.
 5. Field cut threshold to profile of frame and width of door sill for tight fit.
 6. Provide non-corroding fasteners at exterior locations.

2.25 WEATHERSTRIPPING AND GASKETING

- A. Manufacturers:
 1. Pemko or McKinney; an Assa Abloy Group company; ____: www.assaabloydss.com.
 2. Hager Companies; ____: www.hagerco.com/#sle.
 3. National Guard Products, Inc; ____: www.ngpinc.com/#sle.
 4. Gasketing: Weather type
 - a. Models:
 - 1) Door bottom sweeps:
 - (a) McKinney, MCK358CN.
 - (b) National Guard, 202NA.
 - (c) Pemko, 368CN.
 - 2) Frame gasket:
 - (a) Hager, 891SV-DBA
 - (b) McKinney, MCK2891APK.
 - (c) National Guard, 700 NA.
 - (d) Pemko, 2891APK.
 5. Substitutions: See Section 016000 - Product Requirements.
- B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
 1. Head and Jamb Type: Adjustable.
 2. Door Sweep Type: Encased in retainer.
 3. Material: Aluminum, with brush weatherstripping.

4. Provide frame-applied intumescent gasketing on wood doors that are labeled as smoke and draft control doors (Indicated as "S" on Drawings), unless otherwise indicated.
5. See Section 08 1416 when wood door to frame sealing system is applied by door manufacturer.
6. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
7. Provide door bottom sweep on each exterior door, unless otherwise indicated.
8. Provide sound-rated gasketing and automatic door bottom on doors indicated as "Sound-Rated", "Acoustical", or with "Sound Transmission Class (STC) rating"; fabricate as continuous gasketing, do not cut or notch gasketing material.

2.26 FINISHES

- A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
 1. Primary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
 2. Secondary Finish: as follows::; BHMA A156.18.
 - a. For exit devices only, finish is to be US28.
 - b. For continuous gear hinges, finish is to be dark bronze anodized US20 for interior doors and exterior doors with dark bronze frames or US28 for exterior doors with clear anodized aluminum frames.
 3. Exceptions:
 - a. Where base material metal is specified to be different, provide finish that is an equivalent appearance in accordance with BHMA A156.18.
 - b. Hinges for Fire-Rated Doors: Steel base material with painted finish, in compliance with NFPA 80.
 - c. Door Closer Covers and Arms: Color as selected by Architect from manufacturer's standard colors unless otherwise indicated.
 - d. Aluminum Surface Trim and Gasket Housings: Anodized to match door panel finish, not other hardware, unless otherwise indicated.
 - e. Hardware for Aluminum Entrance Doors: Finished to match door panel finish, except at hand contact surfaces provide stainless steel with satin finish, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 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. Install hardware for smoke and draft control doors in accordance with NFPA 105.
- D. Use templates provided by hardware item manufacturer.
- E. Do not install surface mounted items until application of finishes to substrate are fully completed.
- F. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item, unless otherwise noted in the Schedule:..
 1. For Steel Doors and Frames: Install in compliance with DHI (LOCS) recommendations.
 2. For Wood Doors: Install in compliance with DHI WDHS.3 recommendations.
 3. For FRP doors: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames" or as recommended by the manufacturer.

- G. 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.

3.03 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Section 014000 - Quality Requirements.
- B. Inspection and Testing
 - 1. Provide functional testing and inspection of fire door assemblies by a qualified person in accordance with NFPA 80.
 - 2. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
 - 3. Submit a signed, written final report as specified in Paragraph 1.07.A.
 - 4. Correct all deficiencies and schedule a reinspection of fire door assemblies noted as deficient on the inspection report.
 - 5. Inspector to reinspect fire door assemblies after repairs are made.
- C. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.04 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.

3.05 CLEANING

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.
- D. See Section 017419 - Construction Waste Management and Disposal for additional requirements.

3.06 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