

SECTION 08711

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Door Hardware includes items known commercially as finish hardware that are required for doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.
 - 1. Hinges
 - 2. Pivots
 - 3. Key control system
 - 4. Lock cylinders and keys
 - 5. Lock and latch sets
 - 6. Bolts
 - 7. Exit devices
 - 8. Push/pull units.
 - 9. Closers
 - 10. Overhead holders
 - 11. Miscellaneous door control devices
 - 12. Door trim units
 - 13. Protection plates.
 - 14. Weatherstripping for exterior doors
 - 15. Sound stripping for interior doors
 - 16. Automatic drop seals (door bottoms)
 - 17. Astragals or meeting seals on pairs of doors
 - 18. Thresholds
- B. Owner Provided Equipment:
 - 1. Access control security equipment: Provided by Owner
 - 2. Lock cores and keying provided and installed by ORNL locksmith.
- C. Related Sections:
 - 1. Silencers for metal frames: Section 08110.
 - 2. Access control security signal wiring: By Others.
 - 3. Fire Alarm control system wiring: Division 16 Electrical

1.3 SUBMITTALS

- A. Product Data: Submit manufacturers technical product data for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. Hardware Schedule: Submit final hardware schedule in manner indicated below. Coordinate hardware with doors, frames and related work to ensure proper size, thickness, hand, function and finish of hardware. Submit vertical hardware schedule, horizontal hardware schedules are not acceptable.
- C. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
 2. Name and manufacturer of each item.
 3. Fastenings and other pertinent information.
 4. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
 5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
 6. Mounting locations for hardware.
 7. Door and frame sizes and materials.
 8. Lock cores and keying will be installed by ORNL.
- D. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) that is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.
- E. Keying Schedule: Keying by Owner (SNS).
- F. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.

1.4 QUALITY ASSURANCE

- A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.
- B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or employs an experienced architectural hardware consultant (AHC) who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.
- C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware that has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels.
- D. Exit Devices: Where required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL or FM label on exit devices indicating "Fire Exit Hardware".
- E. Regulatory Requirements: In addition to local governing regulations, comply with accessibility requirements of the State of Tennessee and Americans with Disabilities Act Accessibility Guidelines.
- F. Tactile Warning: Doors that lead to areas that may be dangerous to a blind person, including doors to loading platforms, boiler rooms, stages, and as indicated on door schedule, shall be made identifiable to the touch by a knurled texture to the lever handle applied to the contact side.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.
- B. Packaging of hardware is responsibility of supplier. As material is received by the hardware supplier from the various manufacturers, sort and repackage in containers marked with the hardware set number. Two or more identical sets may be packed in the same container.
- C. Environmental Concern for Packaging: Package the hardware shipped to the jobsite in biodegradable packs; such as paper or cardboard boxes and wrapping. If non-biodegradable packing is utilized (such as plastic, plastic bags, styrofoam) then the Contractor will be responsible to dispose of the non-biodegradable packing to a license or authorized collector for recycling of the non-biodegradable packing.
- D. Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.
- E. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is indicated in the Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following.
 - 1. Manufacturer's Product Designations: A manufacturer's name is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers that comply with requirements including those specified elsewhere in this section.

2.2 MATERIALS AND FABRICATION, GENERAL

- A. Hand of door: Drawings show direction of swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement shown.
- B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the applicable hardware units by applicable ANSI A156 series standard for each type hardware and with ANSI A156.18 for finish designations indicated.
- C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- D. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
- E. Provide concealed fasteners for hardware units that are exposed when door is closed, except to extent no standard units of the type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.

- F. Tools and Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3 HINGES

- A. Templates: Provide only template-produced units.
- B. Screws: Provide Phillips flat-head screws complying with the following requirements:
1. For metal doors and frames install machine screws into drilled and tapped holes.
 2. For wood doors and frames install wood screws.
 3. For fire-rated wood doors install #12 x 1-1/4-inch, threaded-to-the-head steel wood screws.
 4. Finish screw heads to match surface of hinges.
- C. Hinge Pins:
1. Out-Swing Exterior Doors: Nonremovable pins.
 2. Out-Swing Corridor Doors with Locks: Nonremovable pins.
 3. Interior Doors: Nonrising pins.
 4. Ferrous Hinges: Steel pins.
 5. Non-ferrous Hinges: Stainless steel pins.
 6. Tips: Flat button and matching plug, finished to match leaves.
- D. Provide ball bearing or anti-friction bearing type hinges for all doors.
- E. Size and Number of Hinges
1. Height of Hinges:
 - a. For doors 36" wide or less: 4-1/2" height.
 - b. For doors over 36" to 48" wide: 5" height.
 - c. For doors over 48" wide: 6" height.
 2. Width of Hinge:
 - a. For hinge height up to 5" high: 4-1/2".
 - b. For hinge height over 5" high: 5" width.
 3. Number of Hinges:
 - a. Doors 60" high or less: 2 hinges.
 - b. Doors over 60" not over 90": 3 hinges.
 - c. Doors over 90" not over 120": 4 hinges.
 - d. One additional hinge for each 30", or fraction thereof, over 120".
 4. Hinge Weight: As recommended by hinge manufacturer.
 5. Number of Hinges for Fire-Rated Doors: Not less than 3 hinges per door leaf for doors 86 inches or less in height. Provide one additional hinge for each additional 30" or fraction thereof.
- F. Hinge Types:
1. Mortise Type: Provide full mortise hinges unless noted otherwise in the hardware schedule.
- G. Hinge numbers used in Hardware sets are intended to show base material only. Refer to above for proper hinge quantity, size and weight.
- H. Hinge Materials/Finish: Stainless steel 630/652 Satin chrome
1. Exterior Doors: Provide stainless steel hinges and stainless steel pins.
 2. Interior Doors: Provide satin chrome on steel.
- I. Manufacturer: Provide hinges of one of the following:
1. Hager Hinge Co.

2. McKinney Mfg. Co.
3. Stanley Hardware.

2.4 PIVOTS

- A. Templates: Except for pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- B. Screws: Provide Phillips flat-head screws complying with the following requirements:
 1. For metal doors and frames install machine screws into drilled and tapped holes.
 2. For wood doors and frames install wood screws.
 3. For fire-rated wood doors install #12 x 1-1/4-inch, threaded-to-the-head steel wood screws.
 4. Finish screw heads to match surface of pivots.

2.5 KEY CONTROL SYSTEM

- A. Provide one key control system and cabinet, for Building 8600, CLO; and a separate keycontrol system and cabinet for Building 8700, Target #1.
- B. Manufacturers: Subject to compliance with requirements, provide key control by one of the following:
 1. Key Control Systems, Inc.
 2. Telkee Inc.
- C. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required each for Building 8600 and Building 8700.
- D. Provide complete cross index system set up by key control manufacturer, and place keys on markers and hooks in the cabinet as determined by the final key schedule.
- E. Provide hinged-panel type cabinet for wall mounting.

2.6 LOCK CYLINDERS AND KEYING

- A. Manufacturer: Provide Best cylinders for all locksets requiring cylinders tied into keying system.
- B. Standard System:
 1. SNS Conventional Facilities (CF) will provide building user plans to ORNL locksmith.
 2. ORNL locksmith will install lock cores and keying.
 3. .
- C. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
- D. .

2.7 LOCKS AND LATCHES

- A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.
- B. Lock Throw: Provide 3/4" minimum throw of latch and deadbolt used on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
 1. Provide 1/2" minimum throw on cylindrical locksets.
- C. Locks and Latches Material/Finish: 626 Satin chrome/ 630 Satin stainless steel.
- D. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 1. Best Lock Corp.
 - a. Mortise Lock: 30H; Lever 14

- b. Cylindrical Lock: 93K; Lever 14
- 2. Sargent Manufacturing Company
 - a. Mortise Lock: 8200; LNP lever
 - b. Cylindrical Lock: 10 Line; LP lever
- 3. Schlage Lock, Div. Ingersoll-Rand Door Hardware Group
 - a. Mortise Lock: L-9000; 17 lever
 - b. Cylindrical Lock D series; Sparta lever
- E. Mortise Lock in Narrow Stile Aluminum Doors: Provide Adams Rite MS1850S mortise lock with 4000 strike. Match faceplate to door stile.
- F. Electric Lock: Security Door Control 7500 Series HiTower. Locking action is provided by mortise lock in door. Remote control is provided by electric actuator in the frame.
 - 1. UL listed mortise lock with 3/4" throw deadlocking latch bolt
 - 2. Electric actuator in frame; fail safe.
 - 3. Operation: 115 Volts AC.

2.8 BOLTS

- A. Manufacturers: Subject to compliance with requirements, provide bolts by one of the following:
 - 1. Glynn-Johnson Corp.
 - 2. H. B. Ives, A Harrow Company.
- B. Flush Bolt Heads: Minimum of 1/2-inch-diameter rods of brass, bronze, or stainless steel with minimum 12-inch-long rod for doors up to 7'-0" in height. Provide longer rods as necessary for doors exceeding 7'-0" in height.
 - 1. Automatic Flush Bolts: Provide one pair, top and bottom, fully automatic, listed for metal fire door assemblies 3 hours and for wood fire doors 1-1/2 hours. Flush bolts shall automatically retract. Bolts shall have a 3/4" throw with a 2" vertical adjustment.
 - 2. Manual Flush Bolts: Flush bolts shall have spring loaded action lever, which will retract the bolt when moved in the up position and project the bolt into the head frame when moved to the down position. Bolts shall have a 5/8" throw with a 7/8" vertical adjustment. Flush bolts shall be made from forged brass with 26D finish.
 - 3. Material/Finish: 630 Stainless steel.
- C. Provide dust-proof strikes for floor bolts, except where special threshold construction provides strike for bolt.
- D. Coordinator: Provide one of the following:
 - 1. Glynn Johnson; COR with Filler Bars.
 - 2. Ives; 900 Series.
 - 3. Finish: Prepared for paint finish.

2.9 INTERLOCKING DOOR PACKAGE

- A. Provide interlocking door package as indicated in hardware sets.
- B. Material (in addition to hardware specified in Hardware Set) provide one each for each opening except power supply and horn:
 - 1. Magnetic lock
 - 2. Door position switch (may be incorporated into magnetic lock)
 - 3. Power supply with logic relays to accommodate operation
 - 4. Emergency release switch with 'EMERGENCY RELEASE' engraved on switch plate
 - 5. Horn
- C. Operation:

1. Interlock system shall be tied into an approved fire alarm system.
2. All doors in interlock system shall be normally operable.
3. Opening one of the doors in the interlock system shall lock (energize) the other door(s) magnetic locks.
4. Magnetic locks shall remain locked (energized) until open door returns to closed position.
5. Emergency release
 - a. Pressing emergency release button shall sound horn and release magnetic lock for a period of 30 seconds.

2.10 EXIT DEVICE

- A. Exit Device:
 1. Panic Exit Device Types: Indicated in hardware sets.
 2. Function: Indicated in hardware sets.
- B. Exit Device Dogging: Except on fire-rated doors where closers are provided on doors equipped with exit devices, equip the units with keyed cylinder dogging device to keep the latch bolt retracted, when engaged.
- C. Exit Device Material/Finish: 630 Satin stainless steel.
- D. Manufacturers: Subject to compliance with requirements, provide exit devices by one of the following:
 1. Monarch Hardware & Mfg. Co., Div Newman Tonks, Inc.
 2. Sargent Manufacturing Company.
 3. Von Duprin, Div. Ingersoll-Rand Door Hardware Group.

2.11 PUSH/PULL UNITS

- A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation, thru-bolted for matched pairs but not for single units.
- B. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation, thru-bolted for matched pairs but not for single units.
- C. Push-Pull Units:
 1. Push:
 - a. Diameter: 1 inch.
 - b. Projection: 2-1/4 inch minimum, 2-1/2" maximum.
 - c. Fastening: Back-to-Back concealed.
 2. Pull: 10" CTC, 1" diameter.
 3. Finish: 630 Satin stainless steel.
- D. Manufacturer: Subject to compliance with requirements, provide push/pull units of one of the following:
 1. Builders Brass Works
 2. Hiawatha, Inc.
 3. Rockwood

2.12 CLOSERS AND DOOR CONTROL DEVICES

- A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.
 1. Parallel Arm Closers: Where parallel arms are required for closers, provide closer unit one size larger than recommended for use with standard arms.
- B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with referenced accessibility standards provisions for door opening force

- C. Provide black resilient parts for exposed bumpers.
- D. Material/Finish: 689 Painted plastic cover, finish to match satin aluminum.
- E. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Overhead Closers:
 - a. LCN, Div. Ingersoll-Rand Door Hardware Group.
 - b. Norton Door Controls
 - c. Sargent Mfg. Co.

2.13 DOOR TRIM UNITS

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Door Trim Units:
 - a. Builders Brass Works Corp.
 - b. H. B. Ives, A Harrow Company.
 - c. Triangle Brass Manufacturing Company (Trimco).
 - d. Rockwood Mfg Co.
 - 2. Kick, Mop, and Armor Plates:
 - a. Hiawatha, Inc.
 - b. H. B. Ives, A Harrow Company.
 - c. Triangle Brass Manufacturing Company (Trimco).
 - d. Rockwood Mfg. Co.
- B. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.
- C. Fabricate protection plates not more than 1-1/2 inches less than door width on hinge side and not more than 1/2 inch less than door width on pull side by height indicated.
 - 1. Metal Plates: Stainless steel, 0.050 inch (U.S. 18 gage).
 - 2. Size: Indicated on Schedule.

2.14 AUTOMATIC DOOR OPERATOR

- A. Electro-Mechanical Operator for Swinging Door: Provide self-contained concealed overhead electro-mechanical door operator with power opening and either spring or power closing and speed control to provide checking in both cycles. Provide connections for power and control wiring. Provide for manual operation that requires less than 20 lbs. force to open door for use when power is off.
 - 1. Operator Action: Provide operator action as indicated by door swing on the drawings.
- B. Provide automatic door operator with automatic handicap mode and manual push and go mode. Operator shall meet requirements for Low Energy Power Operated Door operating equipment as defined in ANSI A156.19.
- C. Capacity: Provide operators of the size recommended by the manufacturer for door size, weight, and movement, for condition of exposure, and for long-term maintenance-free operation under normal traffic load for the type of occupancy indicated.
- D. General:
 - 1. Single doors shall be treated as a single unit.
- E. Equipment:

1. Completely electro-mechanical with micro-processor controls that require no microswitches on the operator.
 2. The control box shall have variable time delays for the opening and closing and hold open functions.
 3. Provide decals visible from both sides, instructing users as to the operation and function of the door
- F. Interface with other electrical hardware to coordinate with electrical locks, card readers and electro-magnets, and exit devices in conjunction with the low energy operator.
- G. Door Opening Control Switch Plate: Provide a manufacturer's standard push plate switch which opens door at the touch of the plate.
1. Provide wall mounted stainless steel push plate switch identified for handicap use. Provide wall mounted push plate on pull sides of door. Provide frame mounted switches on push sides of doors.
- H. Housing: Provide extruded or formed aluminum housing for operators, minimum 0.062" thick, with fasteners concealed when door is in the closed position. Provide access for maintenance.
1. Finish: Provide Kynar finished aluminum; match color of aluminum curtainwall framing.
- I. Adjustment Features: Provide operators that are fully adjustable without removal of the doors. Provide adjustment for opening, closing and checking speeds, as well as length of time door remains open.
- J. Acceptable Manufacturers:
1. NT Dor-O-Matic; Sr. Swing series.
 2. Horton Automatics, 4000LE series.

2.15 WEATHERSTRIPPING

- A. Provide continuous weatherstripping at each edge of every exterior door leaf. Provide non-corrosive fasteners recommended by manufacturer for application indicated.
- B. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.
- C. Head and Jamb Weatherstripping: Provide bumper-type resilient insert and metal retainer strips, surfaced-applied unless shown as mortised or semi- mortised, of following metal, finish and resilient bumper material:
1. Extruded aluminum with natural anodized finish, 0.062" minimum thickness of main walls and flanges.
 2. Closed-cell sponge neoprene insert, 1/4" x 3/4", MIL R6130A, Type II, Grade C.
- D. Weatherstripping at Door Bottoms: Provide weatherstripping consisting of contact type resilient insert and metal housing of the following metal, finish and resilient seal strip.
1. Extruded aluminum with natural anodized finish; 0.062" minimum thickness of main walls and flanges.
 2. Solid neoprene wiper or sweep seal strip, MIL R6055, Class II, Grade 40.
- E. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
1. Pemko, Inc.
 2. Reese Enterprises, Inc.
 3. Zero International, Inc.

2.16 THRESHOLDS

- A. Exterior Hinged Doors: Provide units not less than 4" wide, formed to accommodate change in floor elevation where indicated, fabricated to accommodate door hardware and to fit door frames and as follows:
1. For out-swinging doors provide thermal break units.

- B. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Pemko, Inc.
 - 2. Reese Enterprises, Inc.
 - 3. Zero International, Inc.

2.17 SMOKE GASKETING

- A. Smoke Seals: Self-adhesive silicone rubber head and jamb door gasketing. Smoke tested in accordance with UL 1784 *Air Leakage Tests of Door Assemblies*; and the requirements of NFPA 105, *Installation of Smoke Control Door Assemblies*.
- B. Provide smoke gasketing at all fire rated openings per requirements of UL10C.
- C. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Pemko, Inc
 - 2. Reese Enterprises, Inc.
 - 3. Zero International, Inc.

2.18 ASTRAGALS

- A. Overlapping Astragal: Surface mounted steel astragal 1/4" x 2" with flat head screws.
- B. Overlapping Astragal: Provide overlapping astragal consisting of contact type neoprene insert and aluminum housing.
 - 1. Extruded aluminum with natural anodized finish; 0.062" minimum thickness of main walls and flanges.
 - 2. Solid neoprene wiper or sweep seal strip, MIL R6055, Class II, Grade 40.
- C. Split Astragal: Provide split astragal consisting of overlapping contact type neoprene insert and aluminum housing.
 - 1. Extruded aluminum with natural anodized finish; 0.062" minimum thickness of main walls and flanges.
 - 2. Solid neoprene wiper or sweep seal strip, MIL R6055, Class II, Grade 40.
- D. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Pemko, Inc.
 - 2. Reese Enterprises, Inc.
 - 3. Zero International, Inc.

2.19 MISCELLANEOUS HARDWARE

- A. Stops:
 - 1. Wall Stop:
 - a. Type: Wrought Convex.
 - b. Finish: 630.
 - 2. Application: Provide risers as required. Hardware supplier shall determine fastening.
 - 3. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - a. Builders Brass Works.
 - b. Glynn Johnson.
 - c. Ives
 - d. Rockwood Mfg. Co.

- B. Overhead Holders:
 - 1. Concealed or surface mounted
 - 2. Finish: 626, unless otherwise specified.
 - 3. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - a. Glynn Johnson
 - b. ABH
 - c. Sargent.
- C. Electric Strike:
 - 1. Finish: 630.
 - 2. Manufacturer/Product Line: Provide one of the following:
 - a. HES.
 - b. Von Duprin
 - c. Folger Adams.
- D. Knox Boxes: Provide boxes with 100% welded steel cases and 1/8" stainless steel lock cover. Provide in finish color selected by the Architect. Box shall comply with local Fire Department regulation.
 - 1. Product: Subject to compliance with requirements, provide Series 3200 by The Knox Co.

2.20 HARDWARE FINISHES

- A. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch- lock sets) for color and texture.
- B. Provide finishes that match those established by BHMA.
- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.
- D. Finish Designations: Scheduled designations refer to ANSI A156.18 "Materials & Finishes Standard", including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
- E. Standard Finish Designations: The designations used in schedules and elsewhere to indicate hardware finishes are those established by the Builders Hardware Manufacturers Association usually abbreviated BHMA, except where US number designations are used. Following is a list of BHMA finishes cross referenced to US numbers.

BHMA CODE	FINISH DESCRIPTION	BASE MATERIAL	NEAREST U.S. EQUIV.
600	Primed For Painting	Steel	USP
605	Bright Brass	Brass	US3
606	Satin Brass	Brass	US4
612	Satin Bronze	Bronze	US10
613	Oxidized Satin Bronze Oil Rubbed	Bronze	US10B
618	Bright Nickel Plated	Brass, Bronze	US14
619	Satin Nickel Plated	Brass, Bronze	US15
622	Flat Black Coated	Brass, Bronze	US19

624	Dark Oxidized Statuary Bronze	Bronze	US20A
625	Bright Chromium Plated	Brass, Bronze	US26
626	Satin Chromium Plated	Brass, Bronze	US26D
628	Satin Aluminum	Aluminum	US28
629	Bright Stainless Steel	Stainless Steel	US32
630	Satin Stainless Steel	Stainless Steel	US32
633	Satin Brass	Steel	US4
639	Plated Satin Bronze	Steel	US10
640	Plated Oxidized Satin Bronze Oil Rubbed	Steel	US10B
650	Plated Dark Oxidized Statuary Bronze	Steel	US20A
651	Bright Chromium Plated	Steel	US26
652	Satin Chromium Plated	Steel	US26D
689	Painted	Plastic	AL
698	Satin Brass Plated	Plastic	
699	Satin Bronze Plated	Plastic	
700	Bright Chromium Plated	Plastic	
701	Satin Chromium Plated	Plastic	

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by the Construction Manager.
- B. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
- C. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."
- D. Comply with accessibility requirements of the State of Tennessee and Americans with Disabilities Act Accessibility Guidelines for locations of hardware.
- E. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- F. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- G. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- H. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers."

- I. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.2 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.3 FINISH HARDWARE SCHEDULE

- A. Guide: Door hardware items have been placed in sets which are intended to be a guide to design, grade, quality, function, operation, performance, exposure and other like characteristics of door hardware, and may not be complete. Provide door hardware required to make each set complete and operational. See other requirements of this Section relating to type, design, grade, quality, function, operation, performance, exposure and like characteristics of door hardware items.
 - 1. Hardware set schedule does not reflect hand, backset, method of fastening and like characteristics of door hardware and door operation.
 - 2. Review door hardware sets with door types, sizes and details, and verify function of each item.
 - 3. Door hardware items scheduled may indicate a reference for type, quantity, size, function or like characteristic required. If no such reference is indicated, assign proper quantity, type, size, function or like characteristic to door hardware item.
- B. Reference: Provide door hardware sets as indicated on Drawings and in this Schedule. Hardware set designations specified correspond to set designations indicated on Drawings. The hardware sets are as follows:

HS 1

	Hinges	McKinney	TA2714	652
1	Exit device	Sargent	12-8906	630
1	Exit device	Sargent	12-8610	630
2	Closers	Sargent	351	689
1	Coordinator	Glynn Johnson	COR series	Prime
2	Wall stops	Rockwood	402W	630

HS 2

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
1	Overhead stop	ABH	4000 series	626
1	Wall stop	Rockwood	402W	630

HS 2A

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626

1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
2	Wall stops	Rockwood	402W	630

HS 2B

	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
1	Sound seal	Pemko	303	AL
1	Astragal	Pemko	355	AL
2	Door bottoms	Pemko	430	AL
1	Overhead stop	ABH	4000 series	626
1	Wall stops	Rockwood	402W	630

HS 2C

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1 set	Flush bolts	Glynn Johnson	FB6	626
2	Closer	Sargent	351	689
2	Wall stops	Rockwood	402W	630
1	Coordinator	Glynn Johnson	COR Series	Prime
1	Door Seal	Pemko	303	AL
1	Astragal	Pemko	355	AL
2	Automatic door bottoms	Pemko	430	AL
1	Wall magnet	Rixson	900 series	628
1	Floor magnet	Rixson	980	628

NOTE: * The General Contractor is responsible for providing AC power to the magnet – hold open – devices. The Fire Alarm Contractor is responsible for “interrupting” the AC power to the magnet – hold open – devices.

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades.

HS 3

	Hinges	McKinney	TA2314	630
1	Lock set	Best	35HF	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628

HS 3A

	Hinges	McKinney	TA2314	630
1	Lock set	Best	35HF	630
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Astragal	Pemko	355	AL
2	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
1	Overhead stop	ABH	1000 series	630

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DOOR HARDWARE

KNIGHT/JACOBS JOINT VENTURE

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HS 4				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630
HS 4A				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	S88	BLK
HS 4B				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Wall stop	Rockwood	402W	630
HS 4C				
1	Continuous hinge w/ guard		Markar	HG305 652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351DA	689
1	Wall stop	Rockwood	402W	630
HS 4D				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351PS	689
HS 5				
	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630
HS 5A				
	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1	Wall stop	Rockwood	402W	630
HS 5B				
	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1	Closer	Sargent	351PS	689
HS 6				
2	Pivot set	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Exit device	Sargent	8606 X 106	630
1	Exit device	Sargent	8610	630
2	Closers	Sargent	351PS	689
2	Pulls	Rockwood	157	630
1	Door seal	By Door Mfg		
1	Meeting stile astragal	By Door Mfg		
2	Door bottoms	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

HS 6A

1	Pivot set	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Exit device	Sargent	8504	630
1	Closer	Sargent	351PS	689
1	Pulls	Rockwood	157	630
1	Door seal	By Door Mfg		
1	Door bottom	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

HS 6B

2	Pivot set	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Exit device	Sargent	8606 X 106	630
1	Exit device	Sargent	8610	630
2	Closers	Sargent	351PS	689
2	Pulls	Rockwood	157	630

HS 7

	Hinges	McKinney	TA2714	652
1	Dead bolt	Best	35HF	630
1 set	Flush bolts	Glynn Johnson	FB6	626
2	Closers	Sargent	351	689
2	Push pull bars	Rockwood	11147	630
2	Wall stops	Rockwood	402W	630

HS 8

	Hinges	McKinney	TA2714	652
1	Closer	Sargent	351	689
1	Pull	Rockwood	111	630
1	Push plate	Rockwood	70C	630
1	Kick plate	Rockwood	8" high	630
1	Wall stop	Rockwood	402W	630

HS 9

	Hinges	McKinney	TA2714	652
2	Rite doors	Adams Rite	D3676 X 3081	Prime/630
2	Closers	Sargent	351	689
2	Wall magnets	Sargent	1500 series	620

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades.

HS 10

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1	Wall stop	Rockwood	402W	630

HS 10A

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1	Closer	Sargent	351	689

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DOOR HARDWARE

KNIGHT/JACOBS JOINT VENTURE

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1	Wall stop	Rockwood	402W	630
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HS 10B

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1	Closer	Sargent	351	689
1	Sound seal	Pemko	303	AL
1	Door bottom	Pemko	430	AL
1	Wall stop	Rockwood	402W	630

HS 11

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KL	626
1	Door seal	Pemko	S88	BLK
1	Kick plate	Rockwood	8" high	630
1	Wall stop	Rockwood	402W	630

HS 12

2	Pivot sets	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Exit device	Sargent	8406 X 106	630
1	Exit device	Sargent	8410	630
2	Closers	Sargent	351PS	689
2	Pulls	Rockwood	157	630
1	Access control	See security requirements		
1	Door seal	By Door Mfg		
1	Meeting stile astragal	By Door Mfg		
2	Door bottoms	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric exit device.

HS 12A

2	Pivot sets	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Transfer pivot	Rixson	EM19	626
1	Exit device	Sargent	56-8406 X 106	630
1	Exit device	Sargent	8410	630
2	Closers	Sargent	351PS	689
2	Pulls	Rockwood	157	630
1	Access control	See security requirements		

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric exit device.

HS 12B

2	Pivot sets	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Transfer pivot	Rixson	EM19	626
1	Exit device	Sargent	56-8406 X 106	630
1	Exit device	Sargent	8410	630
2	Closers	Sargent	351PS	689
2	Pulls	Rockwood	157	630
1	Access control	See security requirements		
1	Door seal	By Door Mfg		

1	Meeting stile astragal	By Door Mfg		
2	Door bottoms	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric exit device.

HS 13

2	Pivot sets	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
2	Closers	Sargent	351PS	689
2	Push pull bars	Rockwood	15747	630

HS 13A

2	Pivot sets	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
2	Closers	Sargent	351PS	689
2	Push pull bars	Rockwood	15747	630
1	Door seal	By Door Mfg		
1	Meeting stile astragal	By Door Mfg		
2	Door bottoms	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

HS 13B

1	Pivot set	Rixson	147	626
	Intermediate pivots	Rixson	M19	626
1	Closer	Sargent	351PS	689
1	Push pull bar	Rockwood	15747	630
1	Door seal	By Door Mfg		
1	Door bottom	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628

HS 14

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
2	Wall stops	Rockwood	402W	630

HS 14A

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1 set	Auto flush bolts	Glynn Johnson	FB7/8	626
2	Closers	Sargent	351DA	689
1	Coordinator	Glynn Johnson	COR series	Prime
2	Wall stops	Rockwood	402W	630

HS 15

	Hinges	McKinney	TA2314	630
1	Lock set	Best	35HF	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL

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KNIGHT/JACOBS JOINT VENTURE

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DOOR HARDWARE

1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
HS 16				
	Hinges	McKinney	TA2314	630
1	Exit device	Sargent	8804 X FLW	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
HS 17				
2	Hinges w/ guards	Markar	HG305	630
2	Closers	Sargent	351DA	689
2	Pulls	Rockwood	111	630
2	Push plates	Rockwood	70C	630
2	Armor plates	Rockwood	35" high	630
2	Wall stops	Rockwood	402W	630
HS 18				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KR	626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630
HS 18A				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KR	626
1	Overhead stop	ABH	4000 series	626
HS 18B				
	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KR	626
1	Wall stop	Rockwood	402W	630
HS 19				
	Hinges	McKinney	TA2314	630
1	Exit device	Sargent	8804 X FLW	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
HS 20				
	Hinges	McKinney	TA2714	652
1	Exit device	Sargent	12-8813	630
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630
HS 20A				
	Hinges	McKinney	TA2714	652
1	Exit device	Sargent	12-8813	630
1	Closer	Sargent	351	689
1	Wall magnet	Sargent	1500 series	628

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades.

HS 21				
	Hinges	McKinney	TA2714	652
2	Exit devices	Sargent	12-8713 X ET	630
2	Closers	Sargent	351	689
2	Wall stops	Rockwood	402W	630
HS 22				
	Hinges	McKinney	TA2714	652
1	Digital keypad lock set	Sargent	KP10G77	626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630
HS 22A				
	Hinges	McKinney	TA2714	652
1	Digital keypad lock set	Sargent	KP10G77	626
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
2	Wall stops	Rockwood	402W	630
HS 23				
	Hinges	McKinney	TA2314	630
1	Lock set	Best	35HC	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
HS 24				
	Hinges	McKinney	TA2314	630
1	Lock set	Best	35F	630
1	Closer	Sargent	351PS	689
1	Door Seal	Pemko	303	AL
1	Door Bottom	Pemko	315	AL
1	Threshold	Pemko	176	628
HS 25				
1	Pivot set	Rixson	147	626
	Intermediate pivot	Rixson	M19	626
1	Deadbolt	Adams Rite	MS1850	628
1	Closer	LCN	2030	626
1	Push pull bar	Rockwood	11147	630
1	Door seal	By Door Mfg		
1	Door bottom	By Door Mfg		
1	Threshold	Pemko	252 X 3FG	628
HS 26				
	Hinges	McKinney	TA2714	652
2	Rite doors	Adams Rite	D3676 X 3081	630/Prime
2	Closers	Sargent	351PS	689
HS 27				

	Hinges	McKinney	TA2714	652
2	Closers	Sargent	351	689
2	Push pull bars	Rockwood	11147	630
2	Wall stops	Rockwood	402W	630

HS 28

Cylinder

NOTE: Coordinate cylinder requirements with door manufacturer.

HS 29

	Hinges	McKinney	TA2314	630
1	Transfer hinge	McKinney	TA2314 X CC6	630
1	Exit device	Von Duprin	EL98NL*	630
1	Closer	Sargent	351PS	689
1	Access control	See security requirements		
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628

* No Substitution Permitted.

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric exit device.

HS 29A

	Hinges	McKinney	TA2314	652
1	Lock set	Best	35HEW	630
1	Closer	Sargent	351PS	689
1	Electric strike	Von Duprin	6210	630
1	Access control	See security requirements		

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 29B

	Hinges	McKinney	TA2314	652
1	Lock set	Best	35HEW	630
1	Closer	Sargent	351	689
1	Electric strike	Von Duprin	6210	630
1	Access control	See security requirements		
1	Wall stop	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 30

2 pr.	Hinges	McKinney	T4B2314	652
1	Exit device	Von Duprin	98NL*	630
1	Closer	Yale	3501BF-SB*	689
1	Electric strike	Von Duprin	6111-DS-LC 24VDC FSE	630
1	Access control	See security requirements		
1	Wall Stop	Rockwood	402 W	

* No Substitutions Permitted.

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 31

	Hinges	McKinney	TA2314	630
1	Lock set	Best	35HF	630
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351	689
1	Door seal	Pemko	303	AL
1	Astragal	Pemko	355	AL
2	Door bottoms	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
2	Overhead stops	Sargent	690 series	630

HS 32

	Hinges	McKinney	TA2314	630
1	Exit device	Sargent	8810	630
1	Closer	Sargent	351PS	689
1	Door seal	Pemko	303	AL
1	Door bottom	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628

HS 32A

	Hinges	McKinney	TA2314	630
2	Exit devices	Sargent	8610	630
2	Closers	Sargent	351PS	689
1	Door seal	Pemko	303	AL
2	Door bottoms	Pemko	315	AL
1	Meeting stile astragal	Pemko	303	AL
1	Threshold	Pemko	252 X 3FG	628

HS 33

	Hinges	McKinney	TA2714	652
1	Transfer hinge	McKinney	TA2714 X CC6	652
1	Lock set	Best	35HEW	630
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351PS	689
1	Electric strike	Von Duprin	6210	630
1	Access control	See security requirements		
1	Overhead stop	Sargent	690 series	626

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 34

	Hinges	McKinney	TA2314	652
1	Lock set	Best	35HEW	630
1	Closer	Sargent	351	689
1	Electric strike	HES	700-24D	630
1	Access control	Hirsch	MR1 with Model 8 control board	
1	Wall stop	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 35

	Hinges	McKinney	TA2714	652
1	Lock set	Best		626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630

HS 36

	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1 set	Auto flush bolts	Glynn Johnson	FB7/8	626
2	Closers	Sargent	351DA	689
1	Interlocking door package			
1	Coordinator	Glynn Johnson	COR series	Prime
2	Wall stops	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades

HS 36A

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KAB	626
1 set	Auto flush bolts	Glynn Johnson	FB7/8	626
2	Closers	Sargent	351DA	689
1	Interlocking door package			
1	Coordinator	Glynn Johnson	COR series	Prime
2	Wall stops	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades

HS 36B

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351	689
1	Interlocking door package			
1	Wall stops	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades

HS 36C

	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351	689
1	Electric strike	Von Duprin	6210	630
1	Access control	See security requirements		
1	Interlocking door package			
1	Wall stops	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide extra heavy duty hinges to accommodate door width.

HS 36D

	Hinges	McKinney	TA2714	652
1	Latch set	Best	93KN	626
1	Closer	Sargent	351	689
1	Interlocking door package			
1	Wall stops	Rockwood	402W	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide extra heavy duty hinges to accommodate door width.

HS 37

1 Interlocking door package

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Balance of hardware by door manufacturer.

HS 38

	Hinges	McKinney	TA2314	630
1	Transfer hinge	McKinney	TA2314 X CC6	630
1	Lock set	Best	35HEW	630
1 set	Flush bolts	Glynn Johnson	FB6	626
1	Closer	Sargent	351PS	689
1	Electric strike	Von Duprin	6210	630
1	Access control	See security requirements		
1	Door seal	Pemko	303	AL
1	Astragal	Pemko	355	AL
2	Door bottoms	Pemko	315	AL
1	Threshold	Pemko	252 X 3FG	628
1	Overhead stop	Sargent	690 series	630

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 39

2 Pr	Hinges	McKinney	T4B2314
1	Exit Device	Von Duprin	98NL*
1	Closer	Yale	3501BF-SB
1	Electric Strike	Von Duprin	6111 FSE-DS-LC-24VDC
1	Access control	See security requirements	
1	Door Seal	Pemko	303
1	Door Bottom	Pemco	315
1	Threshold	Pemko	252 X 3FG

* No substitutions permitted.

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 40

7	Hinges	McKinney	TA2714
1	Transfer Hinge	McKinney	TA2714 X CC6
1	Lock Set	Best	35HEW
1	Closer	Sargent	351PS
1 set	Flush Bolts	Glynn Johnson	FB6
1	Electric Strike	Von Duprin	6210 FSE-DS-LC-24VDC
2	Wall Stop	Rockwood	402W

HS 40A

	Hinges	McKinney	TA2714
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DOOR HARDWARE

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1	Transfer Hinge	McKinney	TA2714 X CC6
1	Lock Set	Best	93KD
1	Closer	Sargent	351PS
1 set	Flush Bolts	Glynn Johnson	FB6
1	Electric Strike	Von Duprin	6210 FSE-DS-LC-24VDC
1	Access control	See security requirements	
1	Overhead Stop	Rockwood	690 series
1	Wall Stop	Rockwood	402W

NOTE: Coordinate voltage, operation and electrical characteristics with all related trades. Provide power supply for electric strike.

HS 41

2 pr	Hinges	McKinney	TA2714	652
1	Lock set	Best	93KD	626
1	Closer	Sargent	351	689
1	Wall stop	Rockwood	402W	630

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