



PRCT120260341

DOOR HARDWARE

PART 1 GENERAL

Full-Sized legible color report must be on site and made available by the Permittee for all inspections.

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes:
1. Provide complete Door Hardware and suitable fastenings for the Project in accordance with Drawings, Specifications, and Schedules.
 2. Furnishing items of proper design for use on doors and frames of the thicknesses, profile, swing, security and similar requirements indicated, as necessary for proper installation and function.
 - a. Provide UL Listed systems for exit doors.
 - b. Provide UL Listed systems for fire rated doors where scheduled.
 - c. Provide similar systems on non-latching doors where scheduled.
 3. Furnishing items not specifically mentioned, but necessary to complete the work. These are to match quality and finish of the items specified.
- B. Quantities: Those listed in any instance are for subcontractor's convenience only and are not guaranteed.
- C. Related Sections:
1. Division 08 Section "Steel Doors and Frames."
 2. Division 08 Section "Flush Wood Doors"

1.03 REFERENCES

- A. Standards: Current edition at date of bid.
1. ADAAG - Americans with Disabilities Act "Accessibility Guidelines for Buildings and Facilities."
 2. ANSI/BHMA A156.18 - Materials and Finishes.
 3. ICC/ANSI A117.1 - Accessible and Usable Facilities and Buildings.
 4. NFPA 80 - Standard for Fire Doors and Windows.
 5. NFPA 252 - Methods of Fire Tests of Door Assemblies.
 6. Underwriters Laboratories - Building Materials Directory.
 7. UL 10C - Positive Pressure Fire Test of Door Assemblies.
- B. Codes:
1. IBC International Building Code (IBC).
 2. Chapter 51-50 WAC Washington State Building Code.

1.04 SUBMITTALS

- A. General Requirements: All Submittals shall be in accordance with Division 1 Section "Administrative Requirements".

- B. Product Data: Submit manufacturer's data for each item of Door Hardware
- C. Hardware Schedule: Submit a detailed Door Hardware Schedule.
 - 1. The submitted Door Hardware Schedule shall indicate the complete designation of every item required for each door or opening.
 - 2. Format shall be 8-1/2" x 11" vertical.
 - 3. Furnish cover sheet listing title of project as shown on the Contract Documents, name, address, phone and fax numbers of Owner, Architect, Contractor, and Supplier, name of Certified Hardware Consultant, and date of submittal.
 - 4. List each opening individually under separate headings in the same order as the Door Schedule. Do not continue individual headings on separate pages.
 - 5. Each heading shall indicate opening location, handing, degree of opening, door size, type, fire rating, and Door and Frame material.
 - 6. An index shall be included in the Door Hardware submittals indicating door, page, and heading numbers, and locking function of each opening
 - 7. Indicate product Manufacturer and incorporate cross-reference to symbols used in Article 2.13 Hardware Groups.
 - 8. A cross reference for any abbreviations or symbols used shall be included.
 - 9. Schedules in coded or horizontal format are unacceptable.
 - 10. Submittals not conforming to these requirements will be returned without review, for re-submittal.
- D. Processing: Hardware schedules will not be reviewed by the Architect until they have been reviewed and approved by Contractor. Resubmit only corrected copies of those sheets requiring correction and update distributed copies with corrected sheets.
- E. Modifications: The Door Hardware Submittal shall be kept current throughout the project duration. All revisions incorporated shall be submitted in accordance with the above requirements. Submit only cover sheet and revised pages. All revisions shall clearly identify changes from previous submittal content.
- F. Samples: If requested by the Architect, submit one (1) sample of each exposed hardware category, finished as required, and tagged with full description for coordination with the hardware schedule. Samples will be reviewed, by the Architect, for design and finish only; compliance with other requirements is the responsibility of the Contractor. Units which are acceptable and remain undamaged through submittal procedures may be used on the project.
- G. Color Samples: Submit color charts and physical samples of each product requiring color selection.
- H. Key Schedule: Submit a detailed keying schedule.
 - 1. Content: Include door number, location, lock function, and heading.

I. Operations and Maintenance Data

1. Submittals: Submit Maintenance and Operations Manuals under provisions of Division 01 Section "Closeout Submittals".
2. Content: Provide information only applicable to this project.
 - a. Final "As Built" copy of the Door Hardware Submittal.
 - b. Product Data.
 - c. Key Schedule.
 - d. Installation and maintenance instructions for Locksets, Exit Devices, Automatic Operators, and Door Closers.
 - e. Wiring diagrams.

1.05 QUALITY ASSURANCE

A. Supplier:

1. Recognized builders' hardware supplier who has been furnishing hardware in the same area as the project for a period of not less than five years.
2. Factory direct, authorized and stocking distributor of the Exit Devices, Locksets and Door Closers.
3. Employing an Architectural Hardware Consultant, certified by the Door and Hardware Institute, who is available during the course of the work to meet with the Owner, Architect or Contractor for project hardware consultation.

B. Source: Obtain each kind of Hardware (Butts, Locksets, Exit Devices, Door Closers, etc.) from only one manufacturer.

C. Installer:

1. Door hardware shall be installed only by experienced tradesmen in compliance with trade union jurisdictions, either at the door and frame fabrication plant or at the project site.

D. Templates: Furnish hardware templates for each fabricator of doors, frames and other work to be factory prepared for the installation of hardware. Upon request, check the shop drawings of such other work to confirm that provisions will be made for the proper installation of hardware.

E. Regulatory Requirements:

1. Code Compliance: Comply with Chapter 51-50 WAC Washington State Building Code amendments to the International Building Code.
2. Accessibility Compliance: Door hardware shall meet the requirements of ADAAG, and ICC/ANSI A117.1, Accessible and Usable Building and Facilities.
3. Product Compliance: Provide only hardware which has been tested and listed by recognized testing agency for the types and sizes of doors required, and which complies with the requirements of the door and door frame labels. Provide Door Closers, Automatic self latching bolts, coordinators, gasketing, astragals, or other components if required to conform to label requirements.

1.06 PRODUCT HANDLING AND STORAGE

- A. Packaging: Each item or package is to be separately tagged with identification related to the final hardware schedule. Complete installation instructions shall be included in the packages.
- B. Storage: Provide a locked room at the jobsite for the storage of the hardware.

1.07 WARRANTY

- A. Submittal: Submit Warrantees in accordance with Division 01 “Closeout Submittals and Procedures”.
- B. Coverage: Door hardware shall be guaranteed against defects in workmanship and operation for a period of one year, backed by a factory guarantee of the hardware manufacturer. The following products shall be guaranteed for periods beyond one year:
 - 1. Locks: two years.
 - 2. Door Closers: thirty years.
 - 3. Panic Devices: five years.
 - 4. Continuous Hinges: ten years.

1.08 MAINTENANCE

- A. Extra Materials: Provide one set of Special Tools required for installation and adjustment. which shall be delivered directly to the Owner prior to substantial completion, in accordance with Section 017700, Closeout Submittals and Procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS AND SUBSTITUTIONS

- A. Manufacturers: Products may be furnished by the manufacturers listed under “As Specified” below, or equivalent products of type, grade, design, and function from manufacturers listed under “Acceptable Substitutions.” Requests for products not listed must be made in accordance with Division 01 Section “Product Requirements”.

Product	As Specified (Abbreviation in Schedule)	Acceptable Substitutions
Butt Hinges	Hager (HA)	Ives, Stanley
Locksets and Latchsets	Sargent (SA)	Schlage Corbin
Cylinders	Sargent (SA)	Schlage, Corbin
Permanent Cores and Keying	By Owner	
Door Closers	Sargent (SA)	LCN 4040XP Series PDQ 7100 Series
Kick & Mop Plates	Tice Industries (TI)	Hager, Trimco
Wall and Floor Stops	Trimco (TR)	Ives
Overhead Stop and Holders	Glynn-Johnson (GJ)	ABH
Weatherstrip & Thresholds	National Guard (NGP)	Reese, Zero

2.02 HARDWARE MATERIALS AND FABRICATION

- A. Fasteners: Provide fasteners for installation with each hardware item. Provide Phillips head fasteners, countersunk oval, flat head, or undercut head as appropriate for material to be installed. Provide Door Closers and Exit Devices applied to wood composite or mineral core doors with Sex Bolts sized to the thickness of the door.
- B. Compatibility: Provide fasteners which are compatible with both unit fastened and substrate, and which will not cause corrosion or deterioration of hardware, base material, or fastener.

2.03 HARDWARE FINISHES

- A. General: Unless specifically indicated otherwise, provide architectural hardware in the following finishes.
 - 1. Finish in general shall be: Finish in general shall be: US10B, Dark oxidized Satin Bronze, oil rubbed (BHMA 613), except:
 - a. Interior Butt Hinges: US10B, Oxidized Satin Bronze plated over copper plate, steel base (BHMA 640). US10A (BHMA 643) is unacceptable.
 - b. Door Closers and Removable Mullions: Sprayed Aluminum (BHMA 689).
 - c. Kick Plates: US10B, Dark oxidized Satin Bronze, oil rubbed (BHMA 613).
 - d. Smoke Gasketing: As selected.
 - e. Threshold: As listed.
 - f. Weatherstrip & Door Bottoms: As listed.
 - 2. Aluminum Doors and Frames: Continuous Gear Hinges, Door Closers, Automatic Operators, and Door Sweeps shall match Door and Frame finish.

2.04 BUTT HINGES

- A. Quantity (per Leaf):
 - 1. Door openings up to 60": 2 each.
 - 2. Door openings 60 to 90": 3 each.
 - 3. Doors over 90": Furnish one (1) additional for each 30" increment or fraction thereof.
- B. Sizes:
 - 1. 1-3/4" Exterior & Vestibule Doors: 5 x 4-1/2".
 - 2. 1-3/4" Interior Doors up to and including 36": 4-1/2 x 4-1/2".
 - 3. 1-3/4" Interior Doors over 36": 5 x 4-1/2".
 - 4. 1-3/4" Existing Doors and Frames: Field verify size and weight.
- C. Pins: All hinges are to have non-removable pins (NRP – Set Screw in Barrel).
- D. Width: Width of Hinges shall be as required to clear projecting trim or other conditions to allow maximum degree of opening.
- E. Tips: Hinges shall have Flat Button Tips.

- F. Non-Standard Sizes: For unusual size or weight doors, furnish type, size and quantity recommended by the hinge manufacturer.

2.05 LOCKSETS AND CYLINDERS

- A. Lever Design: LWIL.
- B. Backset: 2-3/4".
- C. Ratings: All Locksets and Latchsets shall be listed with Underwriters Laboratories for A label and lesser class doors.
- D. Cylinders:
 - 1. Cylinders shall be capable of accepting Sargent Large Format Interchangeable Cores.
 - 2. Provide Collars, Compression and Blocking Rings, and Cams as appropriate for each application.
- E. Strikes: Provide Curved Lip Strikes with adequate projection to protect door trim. Provide flat, flush lip strikes for pairs of doors with overlapping Astragals.
- F. Strike Boxes: Provide manufacturers standard wrought or plastic strike boxes.

2.06 DOOR CLOSERS

- A. Drop Plates: Furnish drop plates where doors have insufficient height top rails, or where Regular Arm Door Closers are used in conjunction with Concealed Overhead Stops.
- B. Fluid: Furnish cold weather fluid, at exterior & vestibule doors. Furnish non-flammable fluid at fire rated openings in conformance with UL Test Standard 10C.
- C. Spacer Blocks: Furnish Spacer Blocks where frame stop does not provide for adequate support for the parallel arm soffit shoe.
- D. Special Mounting: Provide special closer mounting as required where interference with weatherstrip or sound seals occurs.
- E. Fasteners:
 - 1. Furnish Shoulder Through Bolts for Door Closers applied to wood and mineral core doors.
 - 2. Furnish Phillip Head Machine Screws for all Hollow Metal Door and Frame applications. Self drilling and tapping fasteners are unacceptable.

2.07 KICK PLATES

- A. General: Kick Plates shall be applied to the Push Side of the Door.
- B. Sizing:
 - 1. Height: Kick Plates: 10".
 - 2. Width: All plates shall be furnished with width as required to provide 1/4" clearance at sides of doors frame stops, Astragals, and stop applied seals.
- C. Fasteners: Provide stainless steel Phillips oval/undercut head, full tread type sheet metal screws for fastening not more than 5 inches on center.
- D. Material: Material: Plates shall be .050 thickness, beveled four edges (B4E).

2.08 STOPS AND HOLDERS

- A. Size: Furnish Overhead Stop and Holders sized as recommended by the manufacturer.
- B. Special Applications: Furnish Overhead Stop and Holders with special shims, brackets, or special template mounting where required.
- C. Site Conditions: Where wall stops are not applicable, furnish floor stops 1215CKU, or Overhead Stops if required.

2.09 THRESHOLDS

- A. Fasteners: Furnish all Thresholds with ¼” – 20 x 2” Flat Head Sleeve Anchors.

2.10 WEATHERSTRIP AND SMOKE GASKETING

- A. Weatherstrip and Seals: Furnish weatherstrip and gaskets for complete perimeter of opening, including mullions, and astragals.

2.11 DOOR SILENCERS

- A. General: Furnish Rubber Door Silencers for all openings.
- B. Quantity: Furnish three (3) for each single door frame, and four (4) for each pair of door frames.
- C. Type: Trimco 1229A.

2.12 KEYING

- A. General: The Permanent Cores and Keys shall be provided by the Owner.
- B. Provide Brass Construction Cores and Keys during the construction period. Plastic Construction Cores are unacceptable.
- C. At final completion of the project, Construction Cylinders shall be returned by the General Contractor to the Door Hardware Supplier.
- D. Furnish:
 - 1. Six Construction Keys.
 - 2. Two Construction Control Keys.

2.13 HARDWARE GROUPS

HW-1

Doors #155, 158, 159

* Each Hinges	HA	BB1168 x Match Existing Size
1 Electric Through Wire Hinge	HA	BB1168 x ETW-8 x Match Existing Size
1 Electrified Lockset	SA	RX-64-8271
1 Door Closer	SA	351-P10
1 Kick Plate	TI	B4EKP
1 Wall Stop	TR	1270CX
1 Set Gasket	NGP	2525C

Card Reader, Power Supply, and Door Position Switch by Division 28

HW- 2

Doors #155A, 155B, 155C, 159A, 159B, 159C

* Each Hinges	HA	BB1279
1 Office Lockset	SA	64-8205
1 Wall Stop	TR	1270CX
1 Set Gasket	NGP	2525C

HW- 3

Door #158A

* Each Hinges	HA	BB1279
1 Passage Latch	SA	8215
1 Overhead Stop	GJ	410S Series
1 Set Gasket	NGP	2525C

HW- 4

Door #158B

* Each Hinges	HA	BB1199 x Match Existing Size
1 Storeroom Lockset	SA	64-8204
2 Flush Bolts	TR	3917 – 12”
1 Dust Proof Strike	TR	3911
1 Door Closer – Active Leaf	SA	351-CPSH
1 Overhead Stop and Holder	GJ	90H Series
2 Kick Plates	TI	B4EKP
1 Threshold	NGP	427EDKB
1 Set Weatherstrip	NGP	700SDKB (Head) x 700ESDKB (Jambs)
1 Door Sweep	NGP	200NDKB
1 Astragal	NGP	139SP x 2525C x SNB

PART 3 EXECUTION

3.01 PREPARATION

- A. Examination: Examine Doors, Frames, and related items for conditions that would prevent the proper application of the Door Hardware. Do not proceed until defects are corrected.
- B. Wall Blocking: Provide solid blocking for wall mounted components.
- D. Fasteners: Check all conditions and use fastening devices as needed to securely anchor all hardware as per manufacturer's published templates. Self-tapping sheet metal screws are not acceptable. Door Closers and Surface Mounted Overhead Stops on wood doors shall be Shoulder through-bolted.

3.02 INSTALLATION

- A. Mounting Heights: Mount units at heights as recommended in "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames (2001)" by Doors and Hardware Institute, except as indicated below. Products not specifically covered shall be installed in accordance with the manufacturer templates and instructions.
1. Hinges:
 - a. Top Hinge: 7-1/4", Top of frame rabbet to centerline of hinge.
 - b. Bottom Hinge: 12-1/4", Bottom of Frame to centerline of hinge.
 - c. Intermediate Hinges: Centered, equal spacing between top and bottom hinges.
 2. Mortise Lock Strikes: 40", bottom of frame to centerline of Strike.
 3. Wall Stops: Locate Wall Stops intended for use with Lever Handle Locksets and Exit Devices at the Centerline of the Spindle or Pull.
- B. Installation: Install each hardware item in compliance with manufacturer's instructions, except as modified below:
1. Cutting and Fitting: Wherever cutting and fitting are required to install hardware surfaces which will be painted or finished at a later time, install each item completely and then remove and store in a secure place. After completion of the finishes, re-install each item.
 2. Door and Frame Finishes: Do not install surface-mounted items until finishes have been completed on the substrate.
 3. Fire Rated Openings: Install in accordance with NFPA 80.
 4. Degree of Opening: Door shall swing to the maximum degree that project conditions will allow. The swings indicated on the floor plan are intended to depict direction and do not indicate full degree of opening.
 5. Door Closers: Door Closer shall be located to allow maximum degree of opening that project conditions will allow. Door Closer shall not be used to stop the door, except for models equipped with an integral stop-on-the-arm feature.
 6. Overhead Stops: Furnish Overhead Stop and Holders with maximum degree of opening that project conditions will allow.
 7. Floor Stops: Locate Floors Stops at maximum degree of opening that project conditions will allow. Do not locate Floor Stops where they create a hazardous condition. Stops should be located no more than 1/3 Door width from the latch edge of the Door.
 8. Thresholds:
 - a. Installation: Threshold shall set be level. Thresholds shall not be mounted over Carpet or other finish materials. At exterior doors, the top of the bevel shall align with the door face unless otherwise indicated by detail.

- b. Sealant and Calking: Set Thresholds in a bed of butyl rubber sealant in conformance with Division 7 requirements. Complete fill all interior voids. Remove excess sealant. Caulk edges and joints of exterior Thresholds to exclude moisture.
- 9. Weatherstrip and Sound Seals:
 - a. Installation: Weatherstrip and Sound Seals shall be installed to provide a continuous seal at head and jambs. Do not notch Sound Seals for surface applied Automatic Door Bottoms.
 - b. Door Closers: Mount and adjust rigid jamb Weatherstrip prior to mounting Parallel Arm Door Closers. Weatherstrip shall be installed to provide a continuous seal at head and jambs. Do not notch Weatherstrip for Door Closer shoe. Lower Door Closer Body 1/4" to allow for mounting of Soffit shoe on top of the weatherstrip. Provide Parallel Arm 5th hole spacer of increased thickness to allow for revised location.
- 10. Smoke Gasket:
 - a. Installation: Completely clean frame and apply gasket in accordance with manufacturer's instructions.
 - b. Mounting: Apply Gasket to Door rabbet of hinge jamb and to stop face of strike jamb and headers.
- 11. Astragals: Astragals shall be applied to the Active Leaf of out-swing doors, Inactive leaf of in-swing doors. Do not notch Astragals for Lock Strikes.
- 12. Flush Bolts: Attach Flush Bolt Rod to Head and slide mechanism with Locktite.
- C. Adjustment: Adjust and check each operating item of hardware and each door to insure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly.

3.03 FINAL ADJUSTMENT

- A. Final Adjustment: Wherever hardware installation is made more than one (1) month prior to acceptance or occupancy, make a final check and adjustment of all hardware items during the week prior to acceptance or occupancy. Clean and lubricate 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.
- B. Door Closer Adjustment: After mechanical systems have been balanced, adjust Door Closers to comply with following ICC/ANSI A117.1 requirements, as modified by WAC 51-50 and the International Building Code:
 - 1. Closing Speed: Door Closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.
 - 2. Opening Force: The maximum force for pushing or pulling a door open shall be as follows: (these forces do not apply to the force required to retract latch bolts or disengage other devices securing the door).
 - a. Fire Doors: The minimum opening force allowable by the appropriate administrative authority.
 - b. Exterior Doors: 10.0 lbf. (44.4 N)
 - c. Interior Doors: 5.0 lbf. (22.2 N)

3. Backcheck: Adjust backcheck to prevent damage to the closer, hardware, door and frame, and wall.
- C. Instruction: Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes.

END OF SECTION