

## SECTION 08710 - FINISH HARDWARE

### City of San Diego, CWP Guidelines

#### PART 1 -- GENERAL

##### 1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing all finish hardware and appurtenant work, complete.
- B. The WORK hereunder shall include all fabrication and mounting templates as needed for fabricators and for control of application of metal items.
- C. In addition thereto, the CONTRACTOR shall provide all trim, attachments, and fastenings indicated or required for proper and complete installation.
- D. The WORK of this Section shall include all hardware that is not indicated in other sections, whether or not such hardware is herein specifically scheduled.
- E. The CONTRACTOR shall coordinate hardware with the WORK of other Sections. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security, and similar requirements indicated, as necessary for proper installation and function.

##### 1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
  - 1. Section 08110 Steel Doors and Frames
  - 2. Section 08220 Fiberglass Reinforced Plastic Doors
  - 3. Section 08410 Aluminum Entrances and Storefronts

##### 1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal Code:
  - 1. Uniform Building Code
  - 2. Uniform Fire Code
  - 3. California Code of Regulations, Title 24

##### 1.4 SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:
  - 1. Commercial Standards:
    - Underwriters' Laboratories, Inc. requirements and approvals.

Hardware Institute (DHI)	"Recommended Procedure for Processing Hardware Schedules and Templates" and "Architectural Hardware Scheduling and Format"
BHMA	Builders' Hardware Manufacturers' Association
ANSI A156.1 through A156.8	Standards for various hardware items

## 1.5 HARDWARE SPECIFIED ELSEWHERE

### A. Hardware for the following is indicated elsewhere:

1. Cabinetwork, including open wall shelving and locks.
2. Signs, except as noted.
3. Toilet accessories of all kinds including grab bars.
4. Rough hardware.
5. Folding partitions, except lock cylinders which are indicated herein.
6. Sliding aluminum doors.
7. Angle sill threshold.

## 1.6 SHOP DRAWINGS AND SAMPLES

### A. The following shall be submitted in compliance with Section 01300:

1. Schedules: Submit schedule at earliest possible date prior to ordering of hardware. Organize the schedule into "Hardware Sets" with an index of doors and a heading, indicating complete designations of every item required for each door or opening. Include the following information:
  - a. Type, style, function, size, quantity, and finish of each hardware item.
  - b. Name, part number and manufacturer of each item.
  - c. Fastenings and other pertinent information.
  - d. Location of hardware set, cross referenced to indications on drawings, both on floor plans and in door schedule.
  - e. Explanation of all abbreviations, symbols, and codes contained in the schedule.
  - f. Indicate specific locations and mountings of heights of each type of hardware.
  - g. Indicate door and frame sizes and materials.
  - h. Include a list of all manufacturers used and their nearest representative, with name, address, and telephone number.
  - i. Submit manufacturer's complete technical data and installation instructions for electric and electronic hardware.
2. Templates: Where required, furnish hardware templates to each fabricator of doors, frames and other WORK where factory preparation is required for proper installation of hardware.
3. Product Data: Submit manufacturer's catalogue cuts, finishes, etc., for CONSTRUCTION MANAGER'S review.
4. Samples: Furnish a representative sample, in the correct finish and color, of each visible component of hardware.

- B. No hardware shall be ordered or delivered until the hardware schedule has been approved by the CONSTRUCTION MANAGER.

#### 1.7 OWNER'S MANUAL

- A. The following shall be included in the OWNER'S MANUAL in compliance with Section 01300:
  - 1. Extended warranty for all hardware.

#### 1.8 SERVICES OF MANUFACTURER

- A. **Inspection, Field Adjustment, and Maintenance Instructions:** Authorized hardware suppliers or manufacturer's representatives shall visit the site for not less than [ ] days to provide the indicated services.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. **Acceptance at the Site:** Individually package each unit of finish hardware, complete with proper fastening and appurtenances, clearly marked on the outside to indicate contents, item numbers, and names corresponding to those listed in the hardware schedule and specific locations in the WORK.
- B. Small miscellaneous items that would not require specific location identification, such as door stops, coat and hat hooks, and door silencers may be quantity packed if properly labeled with item numbers and other identification.
- C. Deliver hardware in manufacturer's original packages individually packaged and carefully marked for its intended opening and use. Pack complete with necessary screws, bolts, keys, instructions, and installation template, if necessary, for spotting mortising tools. Supplier shall furnish to CONTRACTOR with the delivery, a complete list of hardware clearly marked to correspond with marking on each package and with the hardware schedule. CONTRACTOR shall check the hardware upon delivery. The CONTRACTOR shall be responsible for the proper storage of all hardware until ready for installation.

#### 1.10 QUALIFICATIONS

- A. **Hardware Supplier:** The hardware supplier shall be a direct factory contract supplier who has in his employ a certified architectural hardware consultant (AHC) who is available at all reasonable times during the course of the WORK for project hardware consultation to the CONTRACTOR.

#### 1.11 EXTENDED WARRANTY

- A. The CONTRACTOR shall furnish a guarantee from the hardware supplier for all hardware work, as follows:
  - 1. Closers: Ten years, except electronic closers, two years.
  - 2. Exit Devices: Three years
  - 3. All other hardware: Two years

### PART 2 -- PRODUCTS

## 2.1 GENERAL

- A. All items of hardware shall be furnished as required to complete the WORK in accordance with these Specifications and the manufacturer's instructions. Items of hardware not specified shall be provided even though inadvertently omitted from this Specification. Items shall be of equal quality and type.
- B. Where the exact types of hardware specified are not adaptable to the finished shape or size of the members requiring hardware, supplier shall advise the CONTRACTOR and the CONSTRUCTION MANAGER in writing as a part of the submittal process. Supplier shall also provide suggestions of suitable alternatives having as nearly as practicable, the same operation and quality as the type specified.
- C. **Exit Doors:** The intent of the Specifications is that exit doors shall be openable at all times, from the inside, without the use of a key or any special knowledge or effort.
- D. **Fire-Rated Openings:** Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80. This requirement takes precedence over other requirements for such hardware. Provide only such hardware which has been tested and listed by UL for the type and size of each door required, and which complies with the requirements for the door and door frame labels. Latching hardware, door closers, ball bearing hinges, and seals are required whether listed in the Hardware Schedule or not.
  - 1. Where panic exit devices are required on fire-rated doors, provide supplementary marking on door UL label indicating "Fire Door to be Equipped with Fire Exit Hardware," and provide UL label on exit device indicating "Fire Exit Hardware."
- E. The WORK requires the CONTRACTOR to obtain each kind of hardware from only one manufacturer, although several may be indicated as offering products which comply with requirements.

## 2.2 KEYS AND KEYING

- A. CONTRACTOR shall provide temporary key cores and keys during construction at locations the CONTRACTOR selects. After substantial completion, the CONTRACTOR shall remove all temporary cores and furnish all permanent lock cylinders to the OWNER's designated locksmith for keying and installation by OWNER.
- B. CONTRACTOR shall provide all locks and cylinders of the same manufacturer. Each cylinder for each lockset and exit device shall have two "OO" bitted keys furnished.
- C. CONTRACTOR shall stamp all keys "Do Not Duplicate."
- D. Locks shall be interchangeable with the City's master system which uses only Best 7 pin patented key cores and shall conform to Federal Specifications FF-H-106A-87 Series.

2.3 FASTENERS

- A. Furnish screws, bolts, nuts, expansion shields, shim plates, anchors and other fasteners of suitable types and sizes recommended by manufacturer and as required to install hardware securely to withstand hard usage over long life. The fasteners shall match the hardware in material and finish.
- B. All hardware, such as expansion bolts, sex bolts, toggle bolts and other approved anchorages shall be coordinated with the job and to each setting condition.
- C. Screws for items applied on gypsum board shall be sufficiently long to provide solid connection to framing and backing behind the gypsum board.
- D. Phillips head screws shall be used at exposed conditions. Machine screws shall be used at metal doors and frames.

2.4 HINGES AND PIVOTS

- A. Two hinges or pivots shall be provided for each door leaf up to and including 5 feet in height, and an additional hinge shall be added for each 2-1/2 feet or fractions thereof of additional door height. [Dutch doors shall be provided with not less than 2 pairs of hinges.]
- B. Width of hinges shall be determined by trim conditions, but shall be of sufficient size to permit door to swing 180 degrees.
- C. Ball-bearing hinges shall be furnished on all doors having door closers and/or exit devices. All ball-bearing hinges shall have flush tips.
- D. All hinges on exterior doors shall be provided with non-removable pins and security studs.
- E. Hinges shall be [630 (brush finished) stainless steel] [613 (oxidized satin bronze, oil rubbed)] [ ] unless otherwise indicated in the finish hardware schedule.
- F. Hinges and sizes shall be as follows:

<u>Door Thickness (inches)</u>	<u>Door Width (inches)</u>	<u>Hinge Weight</u>	<u>Hinge Height (inches)</u>
1-3/8	36 and under	Reg. Wt., interior use only	3-1/2
1-3/8	37 and over	Reg. Wt., interior use only	4
1-3/4	30 and under	Reg. Wt., exterior use	4-1/2
1-3/4	30 to 39	Reg. Wt., exterior use	4-1/2
1-3/4	40 and over	Extra Hvy Wt., 4 ball bearing, exterior use	4-1/2

- G. Hinges shall be plain bearing type (regular weight) conforming to BHMA No. A 2133; ball bearing hinges (regular weight) conforming to BHMA No. A 2112 or No. A 5112; and ball bearing hinges (heavy weight) conforming to BHMA No. A 2111 or No. A 5112. Hinge manufacturers design options such as 3-knuckle hinges and concealed ball bearing hinges are acceptable. Plain hinges shall be provided with self lubricating bushings.

2.5 FLOOR CLOSERS

- A. Floor closers shall be used on all aluminum doors.

## 2.6 OVERHEAD CLOSERS

- A. All overhead closers shall be the product of one manufacturer. Closers shall have high-strength cast-iron bodies with rectangular, removable non-ferrous covers, adjustable spring power and adjustable back-check, and full rack and pinion action. Closers shall be non-handed and adjustable. Closers shall have back-check regulating screws, with separate screws for closing and latching speeds.
  - 1. Furnish sizes as recommended by manufacturer except where schedule calls for larger size.
    - a. Provide size 2 through 6 unless otherwise indicated at exterior and interior fire rated doors.
    - b. Provide size 1 through 4 at interior non-rated doors.
  - 2. Exterior doors shall have 8.5 lbs maximum pressure to open.
  - 3. Interior doors shall have 5 lbs maximum pressure to pen.
  - 4. Flush transom offset brackets shall be used where parallel arm closers are listed for doors with fixed panels above.
  - 5. Drop brackets are required at narrow head rails.
  - 6. Make labeled doors self-closing where indicated.
  - 7. Closers shall be adjusted by a factory authorized representative.
- B. Locate closers on inside of building, stairs, and rooms.
- C. Surface door closers shall be spray painted to match door hardware.
- D. Soffit shoes shall be provided where corner brackets or regular arm closers are not used and where they are necessary for proper function of the hardware.
- E. Where door closers or other items have lever or similar arms, attachment to doors shall be with sex bolts only.
- F. Closers for outswinging exterior doors shall be top-jamb-mounted and furnished with adapter plates for doors under 7 feet-6 inches in height. If necessary, closers may be mounted on drop brackets on doors above 7 feet-6 inches in height.
- G. The CONTRACTOR and its hardware supplier shall be responsible to provide the right arm for all closer applications. Arms shall be parallel with the closed door whenever possible.
- H. Closers shall be provided with sex bolts for fastening through doors, frames and transoms.

## 2.7 LOCKSETS AND LATCHSETS

- A. All locksets and latchsets and their component parts shall be the product of a single manufacturer and shall be mortise type with anti-friction 2-piece latchbolts with a minimum 3/4-inch-throw and 1-inch-throw dead bolts with hardened roller inserts. Locksets and latchsets at fire rated doors shall meet Uniform Building Code and Uniform Fire Code requirements and shall be modified as necessary. [All locksets, latchsets, privacy sets, and passage sets shall be provided with lever handles conforming to handicapped person requirements unless indicated otherwise.] All locksets and latchsets shall be provided with [satin stainless steel finish 630 (US 32D)] unless otherwise indicated.
- B. The function of each lockset or latchset shall be appropriate for the use of the door to which it is attached.
- C. Hardware for aluminum entrance doors shall be as indicated in schedule. The hardware face plate design shall be coordinated with doors provided.
- D. Where knob type trim is indicated for locksets, latchsets, and privacy sets, the trim shall be cast spherical knobs of 2-inch diameter minimum, 2-1/4-inch wrought roses, screwless attached, and thru-bolted trim. The knob and rose and escutcheon mounting shall be of shank spindle assembly designs.
- E. Mortise deadlocks shall be of weight and quality comparable to locksets and latchsets specified.
- F. Lock strikes shall be 16 gauge curved steel, 1 inch deep box type construction, of sufficient length to clear trim and having curved lips to protect the trim and jambs and be so shaped as to avoid the possibility of tearing clothing.
- G. All locks shall be provided with the same cylinder and keyway for master keying. They shall be the product of the same manufacturer as the locksets unless otherwise indicated. The correct cylinders with all necessary modifications and components such as cams, collars, rings, retainers, plates, fasteners, etc., shall be provided for other specialty hardware such as exit devices, store front locksets, and sliding door locks where the indicated hardware manufacturer is different from the cylinder manufacturer.
- H. Padlocks shall be heavy duty type and shall be of same manufacturer as locksets.
- I. Provide approved fusible links at levers for labeled doors.
- J. Verify whether standard or ANSI cutouts are provided in metal frames.

## 2.8 EXIT DEVICES

- A. All exit devices shall be the product of one manufacturer. The design of outside trim, inside trim, and crossbar shall match. Exit devices shall be (wherever possible) constructed of stainless steel unless otherwise indicated. The finish shall be 630 (US 32D) satin finish stainless steel unless otherwise indicated. Exit devices shall be UL labeled and shall be of corrosion-resistant hardware.
- B. The exit devices shall have side-mounted crossbars unless otherwise specified. They shall be provided with stainless steel lever arms and investment-cast cases. Where bronze or aluminum lever arms are required they shall be drop-forged with pressure-cast cases.
- C. The exit devices shall be provided with stainless steel latch bolt, tailpiece, latch bolt retractor and axle, compression springs, cylinder cam, and lever arm operating stand. Tail piece shall be cadmium plated steel of not less than 3/8-inch diameter. The cylinder shall be retained in the case by a threaded bronze ring. All other interior working members shall be drop-forged bronze. The back plate shall be constructed of stainless steel or bronze. All screws, pins, socket head retaining screws, and other fasteners shall be stainless steel unless otherwise specified.

## 2.9 PUSH PLATES AND PULLS

- A. Push plates shall be 4-inch by 16-inch by 0.050 thick.
- B. Pulls shall be thru-bolted.

## 2.10 KICKPLATES

- A. Kickplates shall be brushed brass or brushed stainless steel, 0.050-gauge, beveled on 4 sides, and 16 inches high, except where necessary to clear a louver in which case they shall be 10 inches high. Width shall be door width less 2 inches for single doors and door width less 1-1/2 inches for pairs of doors. Furnish with machine or wood screws of brass or stainless steel to match other hardware.

## 2.11 DOOR STOPS

- A. Door stops shall be of the type indicated in the hardware schedule and shall be provided with the proper fasteners.
- B. Stops shall be provided with machine screws and anchors at concrete and masonry locations, and toggle bolts at plaster, gypsum board, and wood locations.
- C. Aluminum door stops shall be used with aluminum, chrome, and stainless steel finishes.
- D. Bronze door stops shall be used with brass and bronze finishes.
- E. Provide carpet risers at carpeted areas.

## 2.12 DOOR HOLDERS

- A. Overhead type door holders shall be concealed type of correct size for door, 90 degree openable unless 180 degree opening is indicated, and allowing for checkmating. Interior doors shall be provided with overhead stops if wall type stops can not be used and floor stops make a tripping hazard. Finish shall be chrome plated bronze with satin finish, US 26D, unless otherwise indicated.

## 2.13 DOOR SILENCERS OR MUTES



- A. All interior hollow metal frames shall be provided with rubber silencers, three for each single door and four for pairs of doors. Omit where sound or light seals occur, or where fire-resistive rated door assemblies are indicated.

2.14 THRESHOLDS

- A. Thresholds shall be provided as indicated and shall have a maximum of 1/2-inch rise at entry ways. Return miters shall be provided at thresholds on floor closers.

2.15 WEATHERSTRIPPING AND SEALS

- A. Exterior doors (except for roll-up doors and entrance doors) shall have head, jambs, and astragals weatherstripped with not less than 5/16-inch by 5/8-inch closed cell, neoprene sponge rubber, unless otherwise indicated.
- B. Interior doors shall have head, jambs, and astragals sealed with self-adhesive bubble configuration door seal designed against smoke, air, sound, and weather infiltration. The seals shall be fire tested and labeled as a gasketing for use on steel frames with wood or steel doors for 20-minutes C-label, 1 hour B-label, and 1-1/2-hour B-label doors.
- C. **Seals:** All seals shall be furnished to match adjacent frame color. Solid neoprene shall comply with MIL Spec R6855-CL III, Grade 40. Sponge neoprene shall comply with MIL Spec R6130, Type II, Group C. Other seals and sweeps shall be polyurethane. UL label shall be applied to the seals on all rated doors.

2.16 TEMPLATES

- A. Hardware indicated for metal frames shall be made to template and secured with machine screws. Templates, or physical hardware items, shall be furnished to manufacturers sufficiently in advance to avoid delay in the WORK.

2.17 REINFORCING UNITS

- A. Reinforcing required for installation of hardware in metal jambs shall be furnished by jamb manufacturer, coordinated with hardware manufacturer and provided in time to be installed and welded within jamb during fabrication.

2.18 MANUFACTURERS

- A. **General:** Hardware items shall be products of the following manufacturers (or equal). Cylinder cores shall be compatible and interchangeable with existing City of San Diego Metropolitan Wastewater Department operations keying systems.

<u>Description</u>	<u>Manufacturer</u>	<u>Model #</u>	<u>Other Information</u>
Floor closers	Rixson-Firemark	27 Series	
	Dor-O-Matic	2500	
Overhead closers	P & F Corbin	120 Series	
	Russwin	2820 Series	

	Sargent LCN	350 Series 4040	
Locksets and Latches (Lever Type Hardware Meeting Handicap Requirements)	Best	30 H Series	
Locksets and Latches	Arrow Falcon Best	H Series X Series 9 K Series	
Hardware for Aluminum Entrance Doors	Adams Rite		
Exit Devices	Von Duprin Von Duprin Sargent Russwin  Corbin  Monarch	3300 Series 9900 Series 60 Series 372-LT 375-375  29 Series  18 Series	Rim Type Rim Type  Rim Only, Single Doors Rim Only with Mullion
Hinges	Hager	BB1179	
Push Plates	Quality Hardware Builders Brass Rockwood	40 Wks 70	47E
Pulls	Quality Hardware Builders Brass	402 Wks	47-255-1-E
Kickplates	Builders Brass Wks Quality Hardware	37 Series 48 Series	
Door Stops (Floor Type w/Holder)	Builders Brass Wks Quality Hardware	F-823X 139	
Door Stops (Floor, Dome Type)	Builders Brass Wks Quality Hardware	F-8061X 431 ES	
Door Stops (Floor Type w/Holder)	Builders Brass Wks Quality Hardware	F-823X 139	
Door Stops (Wall Type w/Holder Expansion Bolt Mounted)	Builders Brass Wks Quality Hardware	W-141X 36	
Door Stops (Wall Type w/Holder, Flat Head)	Builders Brass Wks Quality Hardware	W-141X 36	

Wood Screw Mounted)

Door Bumpers (Wall Dome Type, Expansion Bolt Mounted)	Builders Brass Wks Quality Hardware	W9X W 207S
Door Stops (Wall Base, Expansion Bolt Mounted)	Builders Brass Wks Quality Hardware	W-146 138
Door Stops (Wall Base)	Builders Brass Wks Quality Hardware	W146 38
Door Holders (Concealed Overhead Type)	P & F Corbin FS Type 1164 Glynn-Johnson	840 Series GJ 320 Series
Door Holders (Surface Overhead Type)	P & F Corbin FS Type 1161 Glynn-Johnson	1865 Series GJ 90M
Door Silencers or Mutes (Metal Frames)	Glynn-Johnson Hager 307D	64
Door Silencers or Mutes (Wood Frames)	Glynn-Johnson Hager 308D	65
Weatherstripping	Pemko Mfg. Co. National Guard Products, Inc. Lero Weatherstripping Co.	
Seals for Fire Rated Doors	Pemko S88D National Guard Products, Inc.	TM 181

### **PART 3 -- EXECUTION**

#### **3.1 GENERAL**

- A. CONTRACTOR shall install finish hardware as required. Hardware shall be fitted prior to painting which shall be completed before final installation of hardware. Finish hardware must be neatly and properly installed and secured firmly in place in accordance with best practices as prescribed by manufacturers. All hardware must be thoroughly cleaned prior to final acceptance by OWNER.
- B. No extra cost will be allowed because of changes or corrections necessary to facilitate installation of any hardware. CONTRACTOR shall be responsible for proper fabrication of all WORK or material to receive hardware.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

- D. Installation shall conform to local governing agency security ordinances.

### 3.2 MOUNTING POSITIONS

- A. Heights given are centerline heights up from floor unless otherwise indicated and shall be subject to the Title 24 requirements; all similar items shall be at the same height. Heights of items not indicated shall be in accordance with recommendations of Builders Hardware Association.
  - 1. Top hinge: 5 inches from door top to top of hinge.
  - 2. Bottom hinge: 10 inches from door bottom to bottom of hinge.
  - 3. Intermediate hinges: Equally spaced between top and bottom hinges and from each other.
  - 4. Hinge mortise on door leaf: 1/4-inch to 5/16-inch from stop side of door.
  - 5. Lock: 38 inches from finished floor to center lever or knob.
  - 6. Push bar: 45 inches from bottom of door to center of bar.
  - 7. Push plate: 48 inches from bottom of door to center of plate.
  - 8. Pull plate: 42 inches from bottom of door to center of pull.
  - 9. Panic: 38-13/16 inches from finished floor to center of pad.
  - 10. Dead bolt: Not more than 72 inches from floor to operating knob or lever.
  - 11. Door stops mounted on doors: Mount near floor so as to strike base, but not to rub carpet or flooring. 2-3/4-inch backset.
  - 12. Deadlock strike: 44 inches from floor, centered.

### 3.3 ADJUSTMENT

- A. After installation of hardware and after air supply is turned on, qualified hardware supplier's or manufacturer's representatives of operating hardware shall inspect the installation, make adjustments and deliver instructions for maintenance and future adjustments to the OWNER.
- B. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly.
  - 1. Latches and bolts shall be installed to automatically engage in keepers, whether activated by closers or by manual push. In no case shall manual pressure be required to engage latch or bolt in keepers.
  - 2. Closers and hinges shall be carefully adjusted to operate the doors noiselessly and evenly and hinges shall be installed so as not to bind.
- C. **Inspection:** Hardware supplier shall inspect all hardware before final acceptance and include with his guarantee a statement that this has been accomplished. The supplier shall indicate that the hardware is complete and correctly installed and adjusted.

### 3.4 HARDWARE SCHEDULE

- A. The hardware schedule is arranged for convenience of locating hardware and does not preclude in any way the requirements that all necessary hardware shall be furnished and properly installed. Hardware not specifically called out shall be similar to that required for similar uses.
- B. The catalog numbers referred to in the hardware schedule are taken from catalogs of the manufacturers listed. They are used only to establish the quality and type of hardware to be used. Hardware equal in quality and utility will be accepted provided it has been submitted in conformance with Section 01600 and accepted as a valid substitution and provided it conforms in operation, quality, weight, size, workmanship, and finish to the products hereinafter described. All component parts of locksets shall be the product of one manufacturer.

FINISH HARDWARE SCHEDULE ABBREVIATIONS  
(Not Standard With Industry)

- CA = Clear anodized BHMA 628
- DBA = Dark bronze anodized (313)
- PMD = Paint to match door and/or frame BHMA 600
- F# = ANSI, hardware function number
- W/SS = With security studs
- NRP = Non-removable pins
- DW+3 = Door width plus 3-inches
- DW-2 = Door width less 2-inches
- EB = Expansion bolts
- TB = Toggle bolts
- SB = Sex bolts
- Mfr = Manufacturer
- WS = Weatherstripping, 5/16-inch by 5/8inch closed cell sponge neoprene.
- F/S = Fire seals

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NTS: Insert Hardware Schedule here.

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\*\* END OF SECTION \*\*