

VA West Los Angeles Healthcare Center
Los Angeles, California

VA Project 691-13-112WL
Correct Handicap Deficiencies at Various Buildings
(B500 Restroom Renovations)

SECTION 08 71 00 DOOR HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Door hardware and related items necessary for complete installation and operation of doors.

1.2 RELATED WORK

- A. Caulking: Section 07 92 00 JOINT SEALANTS
- B. Application of Hardware: Section 08 14 00, WOOD DOORS, Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, and Section 08 71 13.11, LOW ENERGY DOOR OPERATORS
- C. Finishes: Section 09 06 00, SCHEDULE FOR FINISHES
- D. Painting: Section 09 91 00, PAINTING
- E. Electrical: Division 26, ELECTRICAL
- F. Fire Detection: Section 28 31 00, FIRE DETECTION AND ALARM

1.3 GENERAL

- A. All hardware shall comply with ABAAS (Architectural Barriers Act Accessibility Standards) unless specified otherwise.
- B. Provide rated door hardware assemblies where required by most current version of the International Building Code (IBC).
- C. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.
- D. Hardware for application on wood doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.
- E. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Project Engineer's/Architect's approval.

- F. Coordination: Coordinate hardware with other work. 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, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:
1. Location of wall-mounted hardware, including wall stops
 2. Location of finish floor materials and floor-mounted hardware
 3. Fire/life-safety system interfacing
 4. Manufacturer templates to door and frame fabricators
- G. Check Shop Drawings and field verify for doors to confirm that adequate provisions will be made for proper hardware installation.

1.4 WARRANTY

- A. Automatic door operators shall be subject to the terms of FAR Clause 52.246-21, except that the Warranty period shall be two years in lieu of one year for all items except as noted below:
1. Locks, latchsets, and panic hardware: 5 years.
 2. Door closers and continuous hinges: 10 years.

1.5 MAINTENANCE MANUALS

- A. In accordance with Section 01 00 00, GENERAL REQUIREMENTS Article titled "INSTRUCTIONS", furnish maintenance manuals and instructions on all door hardware. Provide installation instructions with the submittal documentation.

1.6 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit 6 copies of the schedule per Section 01 33 23. Submit 2 final copies of the final approved schedules to VAMC Locksmith as record copies (VISN Locksmith if the VAMC does not have a locksmith).
- B. Hardware Schedule: Prepare and submit hardware schedule in the following form:

Hardware Item	Quantity	Size	Reference Publication Type No.	Finish	Mfr. Name and Catalog No.	Key Control Symbols	UL Mark (if fire rated and listed)	ANSI/BHMA Finish Designation

C. Samples and Manufacturers' Literature:

1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.
2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.

D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

1.7 DELIVERY AND MARKING

- A. Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to Project Engineer/Architect for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in Project Engineer's/Architect's office until all other similar items have been installed in project, at which time the Project Engineer/Architect will deliver items on file to Contractor for installation in predetermined locations on the project.

1.8 PREINSTALLATION MEETING

- A. Convene a preinstallation meeting not less than 30 days before start of installation of door hardware. Require attendance of parties directly affecting work of this section, including Contractor and Installer, Architect, Project Engineer/Architect and VA Locksmith, Hardware Consultant, and Hardware Manufacturer's Representative. Review the following:
1. Inspection of door hardware
 2. Job and surface readiness
 3. Coordination with other work
 4. Protection of hardware surfaces
 5. Substrate surface protection
 6. Installation

7. Adjusting
8. Repair
9. Field quality control
10. Cleaning

1.9 INSTRUCTIONS

- A. Hardware Set Symbols on Drawings: Except for protective plates, door stops, mutes, thresholds and the like specified herein, hardware requirements for each door are indicated on drawings by symbols. Symbols for hardware sets consist of letters (e.g., "HW") followed by a number. Each number designates a set of hardware items applicable to a door type.
- B. Manufacturers' Catalog Number References: Where manufacturers' products are specified herein, products of other manufacturers which are considered equivalent to those specified may be used. Manufacturers whose products are specified are identified by abbreviations as follows:

IVES	Ingersoll Rand	Piscataway NJ
LCN	Ingersoll Rand	Piscataway NJ
NGP	National Guard Products	Memphis, TN
SCE	Ingersoll Rand	Piscataway, NJ
Schlage	Ingersoll Rand	Piscataway, NJ
SDC	Security Door Controls	Camarillo, CA

- C. Keying: All cylinders shall be keyed into existing Grand Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7 pin type. Keying information shall be furnished at a later date by the Project Engineer/Architect.

1.10 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.
- B. American Society for Testing and Materials (ASTM):

E2180-07.....Standard Test Method for Determining the Activity of
Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic
Materials

C. American National Standards Institute/Builders Hardware Manufacturers Association
(ANSI/BHMA):

- A156.1-06..... Butts and Hinges
- A156.2-03..... Bored and Pre-assembled Locks and Latches
- A156.16-08..... Auxiliary Hardware
- A156.18-06..... Materials and Finishes
- A156.22-05..... Door Gasketing and Edge Seal Systems
- A156.28-07 Master Keying Systems
- A156.31-07 Electric Strikes and Frame Mounted Actuators
- A250.8-03..... Standard Steel Doors and Frames

D. National Fire Protection Association (NFPA):

- 80-13 Fire Doors and Fire Windows
- 101-12 Life Safety Code

E. Underwriters Laboratories, Inc. (UL):

Building Materials Directory (2012)

PART 2 - PRODUCTS

2.1 BUTT HINGES

- A. ANSI A156.1. Provide only three-knuckle hinges, except five-knuckle where the required hinge type is not available in a three-knuckle version (e.g., some types of swing-clear hinges). The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified:

1. Interior Doors: Type A8112/A5112 for doors 900 mm (3 feet) wide or less and Type A8111/A5111 for doors over 900 mm (3 feet) wide. Hinges for doors exposed to high humidity areas (shower rooms, toilet rooms, kitchens, janitor rooms, etc. shall be of stainless steel material.

- B. Provide quantity and size of hinges per door leaf as follows:

1. Doors 1210 mm (4 feet) to 2260 mm (7 feet 5 inches) high: 3 hinges minimum.
2. Doors over 1065 mm (3 feet 6 inches) to 1210 mm (4 feet), heavy weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).

3. Provide heavy-weight hinges where specified.
4. At doors weighing 330 kg (150 lbs.) or more, furnish 127 mm (5 inch) high hinges.

2.2 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Lock cylinders shall have not less than seven pins. Cylinders for all locksets shall be removable core type. Cylinders shall be furnished with construction removable cores and construction master keys. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 19 mm (3/4 inch) throw, unless shorter throw allowed by the door manufacturer's fire label. Provide temporary keying device or construction core of allow opening and closing during construction and prior to the installation of final cores.
- B. In addition to above requirements, locks and latches shall comply with following requirements:
 1. Cylindrical Lock and Latch Sets: levers shall meet ADA (Americans with Disabilities Act) requirements. Cylindrical locksets shall be series 4000 Grade I. All locks and latchsets shall be furnished with 122.55 mm (4-7/8-inch) curved lip strike and wrought box. Provide lever design to match design selected by Architect or to match existing lever design. Where two turn pieces are specified for lock F76, turn piece on inside knob shall lock and unlock inside knob, and turn piece on outside knob shall unlock outside knob when inside knob is in the locked position. (This function is intended to allow emergency entry into these rooms without an emergency key or any special tool.)
 2. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.5.
 5. Privacy locks in non-mental-health rooms shall have an inside thumbturn for privacy and an outside thumbturn for emergency entrance.

2.3 KEYS

- A. Stamp all keys with change number and key set symbol. Furnish keys in quantities as follows:

Locks/Keys	Quantity
Cylinder locks	2 keys each
Cylinder lock change key blanks	100 each different key way
Master-keyed sets	6 keys each

Grand Master sets	6 keys each
Great Grand Master set	5 keys
Control key	2 keys

2.4 ELECTRIC STRIKES

- A. ANSI/ BHMA A156.31 Grade 1.
- B. General: Use field selectable fail safe/fail-secure electric strikes at fire-rated doors.

2.5 ARMOR PLATES, KICK PLATES, MOP PLATES AND DOOR EDGING

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates as specified below:
 - 1. Kick plates, mop plates and armor plates of metal, Type J100 series.
 - 2. Provide kick plates and mop plates where specified. Kick plates shall be 254 mm (10 inches) or 305 mm (12 inches) high. Mop plates shall be 152 mm (6 inches) high. Both kick and mop plates shall be minimum 1.27 mm (0.050 inches) thick. Provide kick and mop plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors which shall have plates 25 mm (1 inch) less than width of each door. Extend all other kick and mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick and mop plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.
 - 3. Kick plates and/or mop plates are not required on following door sides:
 - a. Armor plate side of doors;
 - 4. Armor plates for doors are listed under Article "Hardware Sets". Armor plates shall be thickness as noted in the hardware set, 875 mm (35 inches) high and 38 mm (1-1/2 inches) less than width of doors, except on pairs of metal doors. Provide armor plates beveled on all 4 edges (B4E). Plates on pairs of metal doors shall be 25 mm (1 inch) less than width of each door. Where top of intermediate rail of door is less than 875 mm (35 inches) from door bottom, extend armor plates to within 13 mm (1/2 inch) of top of intermediate rail. On doors equipped with panic devices, extend armor plates to within 13 mm (1/2 inch) of panic bolt push bar.

2.6 DOOR STOPS

- A. Conform to ANSI A156.16.

- B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction.
- C. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers Type L02251 (rubber pads having concave face) to receive turn piece or button.
- D. Wall bumpers, where used, must be installed to impact the trim or the door within the leading half of its width.
- E. Where drywall partitions occur, use wall stops, Type L52251 as specified.
- F. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.

2.7 SEALS

- A. Conform to ANSI A156.22.
- B. Provide continuous self-adhesive seals at head and both jambs. Miter corners.

2.8 THRESHOLDS

- A. Marble: See Section 09 30 13, CERAMIC/PORCELAIN TILING.

2.9 FINISHES

- A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.
- B. 626 or 630: All surfaces on interior of building, except where other finishes are specified.
- C. Miscellaneous Finishes:
 - 1. Hinges --interior doors: 652.
 - 2. Automatic Operators: 680. Factory applied paint finish. Dull or Satin Aluminum color.
 - 3. Thresholds: Marble.
 - 4. Other primed steel hardware: 600.
- D. Hardware Finishes for Existing Buildings: U.S. Standard finishes shall match finishes of hardware in (similar) existing spaces except where otherwise specified.
- E. Anti-microbial Coating: All hand-operated hardware (levers, pulls, push bars, push plates, paddles, and panic bars) shall be provided with an anti-microbial/anti-fungal coating that has passed ASTM E2180 tests. Coating to consist of ionic silver (Ag+). Silver ions surround bacterial cells, inhibiting growth of bacteria, mold, and mildew by blockading food and respiration supplies.

2.10 BASE METALS

- A. Apply specified U.S. Standard finishes on different base metals as following:

Finish	Base Metal
652	Steel
626	Brass or bronze
630	Stainless steel

PART 3 - EXECUTION

3.1 HARDWARE HEIGHTS

- A. For existing buildings locate hardware on doors at heights to match existing hardware. The Contractor shall visit the site, verify location of existing hardware and submit locations to VA Project Engineer/Architect for approval.
- B. Hardware Heights from Finished Floor:
1. Deadlocks centerline of strike 1219 mm (48 inches).
 2. Locate other hardware at standard commercial heights and in compliance with ABAAS requirements. Locate push and pull plates to prevent conflict with other hardware.

3.2 INSTALLATION

- A. Closer devices, including those with hold-open features, shall be equipped and mounted to provide maximum door opening permitted by building construction or equipment. Closers shall be mounted on side of door inside rooms, inside stairs, and away from corridors except security bedroom, bathroom and anteroom doors which shall have closer installed parallel arm on exterior side of doors. Where closers are mounted on doors they shall be mounted with sex nuts and bolts; foot shall be fastened to frame with machine screws.
- B. Hinge Size Requirements:

Door Thickness	Door Width	Hinge Height
45 mm (1-3/4 inch)	Over 900 mm (3 feet) but not more than 1200 mm (4 feet)	125 mm (5 inches)

- C. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim and surrounding conditions.

- D. Where new hinges are specified for new doors in existing frames or existing doors in new frames, sizes of new hinges shall match sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by Project Engineer/Architect. Existing hinges shall not be reused on door openings having new doors and new frames. Coordinate preparation for hinge cut-outs and screw-hole locations on doors and frames.

- E. Hinges Required Per Door:

Doors over 1500 mm (5 ft) high and not over 2280 mm (7 ft 6 in) high	3 butts
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- F. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.
- G. After locks have been installed; show in presence of Project Engineer/Architect that keys operate their respective locks in accordance with keying requirements. (All keys, Master Key level and above shall be sent Registered Mail to the Medical Center Director along with the bitting list. Also a copy of the invoice shall be sent to the Project Engineer/Architect for his records. Installation of locks which do not meet specified keying requirements shall be considered sufficient justification for rejection and replacement of all locks installed on project.

3.3 FINAL INSPECTION

- A. Installer to provide letter to VA Project Engineer/Architect that upon completion, installer has visited the Project and has accomplished the following:
1. Re-adjust hardware.
 2. Evaluate maintenance procedures and recommend changes or additions, and instruct VA personnel.
 3. Identify items that have deteriorated or failed.
 4. Submit written report identifying problems.

3.4 DEMONSTRATION

- A. Demonstrate efficacy of mechanical hardware and electrical and electronic hardware systems, including adjustment and maintenance procedures, to satisfaction of Project Engineer/Architect and VA Locksmith.

3.5 HARDWARE SETS

- A. Following sets of hardware correspond to hardware symbols shown on drawings. Only those hardware sets that are shown on drawings will be required. Disregard hardware sets listed in specifications but not shown on drawings.
- B. Hardware Consultant working on a project will be responsible for providing additional information regarding these hardware sets. The numbers shown in the following sets come from BHMA standards.

ELECTRIC HARDWARE ABBREVIATIONS LEGEND:

ADO = Automatic Door Operator

INTERIOR SINGLE DOORS

HW SET: 01 (RESTROOM DOORS)

EACH ADO DOOR TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 5 X 4.5 (A8111)	652	IVE
1	EA	PRIVACY W/DB & IND	L9496HD OCCUPIED/VACANT 06A X L583-363	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING	626	TBD
1	EA	ELECTRIC STRIKE	SDC-55-DBM W/DEADBOLT MONITORING	630	SDC
1	EA	AUTO OPERATOR	4631	689	LCN
2	EA	ACTUATOR, WALL MOUNT	8310-853T	630	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E (J102)	630	IVE
1	EA	MOP PLATE	8400 4" X 1" LDW B4E (J103)	630	IVE
1	EA	WALL STOP	WS407CCV (L52251)	630	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	POWER SUPPLY	PS902	LGR	SCE

OPERATIONAL DESCRIPTION: IMMEDIATE EGRESS ALWAYS ALLOWED. DOOR IS NORMALLY CLOSED AND LATCHED. ACCESS MANUALLY, AS DESCRIBED ABOVE IN FUNCTION OF LOCKSET, OR BY DEPRESSING ACTUATOR TO AUTOMATICALLY OPEN DOOR WHEN DEADBOLT IS RETRACTED. ACTUATOR TO RELEASE ELECTRIC STRIKE THEN ACTIVATE AUTOMATIC OPERATOR TO OPEN USING RELAY BOARD IN AUTOMATIC OPERATOR. WHEN DEADBOLT IS PROJECTED, DEADBOLT MONITOR SWITCH IN LOCKSET SHALL SHUNT ACTUATOR ON CORRIDOR. ELECTRIC STRIKE CAPTURES DEADBOLT ONLY – IT WILL NOT RELEASE IT. LOCATE ACTUATORS AS DIRECTED BY ARCHITECT.

POWER TRANSFER RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13.11).

HW SET: 02 (PATIENT ROOM DOORS)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 5 X 4.5 (A8111)	652	IVE
1	EA	PASSAGE SET	L9010 06A	626	SCH
1	EA	WALL STOP	WS407CCV (L52251)	630	IVE
1	SET	SEALS	5050B	BRN	NGP

HW SET: 03 (SHARED RESTROOM DOORS)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	HOSPITAL PRIVACY	ND44S RHO	626	SCH
1	EA	WALL STOP	WS407CCV (L52251)	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 04 (STORAGE ROOM DOOR)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 5 X 4.5 (A8111)	652	IVE
1	EA	STOREROOM LOCK	L9080HD 06A	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING	626	TBD
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E (J102)	630	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	THRESHOLD	AS REQUIRED	719	NGP

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