

**SECTION 08 71 00  
DOOR HARDWARE**

SPEC WRITER NOTES:

1. Use this section only for NCA projects.
2. Delete between // --- // if not applicable to project. Also delete any other item or paragraph not applicable in the section and renumber the paragraphs.

**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, INTERIOR WOOD DOORS // Section 08 11 13, HOLLOW METAL DOORS AND FRAMES // Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS // Section 08 33 00, COILING DOORS AND GRILLES // Section 08 71 13.11, LOW ENERGY POWER ASSIST DOOR OPERATORS //.
- C. Finishes: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Painting: Section 09 91 00, PAINTING.
- E. Card Readers: Section 28 13 11, PHYSICAL ACCESS CONTROL SYSTEMS.
- F. Electrical: Division 26, ELECTRICAL.

**1.3 GENERAL**

- A. All hardware must comply with UFAS, (Uniform Federal Accessible 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. Instead 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.

SPEC WRITER NOTES:

1. The word "FIRE" must be included as part of the certification on the

Underwriters Laboratories label on exit devices to be used on fire doors.

- D. Make hardware for application on metal and wood doors and frames to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.
- E. The following items to be of the same manufacturer, if possible, except as otherwise specified:
  - 1. Mortise locksets.
  - 2. Hinges for hollow metal and wood doors.
  - 3. Surface applied overhead door closers.
  - 4. Exit devices.

**1.4 SUSTAINABILITY REQUIREMENTS**

- A. Materials in this section may contribute towards contract compliance with sustainability requirements. See Section 01 81 11, SUSTAINABLE DESIGN REQUIRMENTS, for project // local/regional materials, // low-emitting materials, // recycled content, // \_\_\_\_\_// requirements.

**1.5 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.
- 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 must 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

must be accompanied by copies of reports as referenced. The testing must have been conducted 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.

#### **1.6 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 RE/COR for reference purposes. Tag must identify items by Project Specification number and manufacturer's catalog number. These items will remain on file in RE/COR's office until all other similar items have been installed in project, at which time the RE/COR will deliver items on file to Contractor for installation in predetermined locations on the project.

#### **1.7 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 "HW" followed by a number. Each number designates a set of hardware items applicable to a door type.
- B. Keying: Key cylinders into existing \_\_\_\_\_ // Great // Grand Master Key System //. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Provide // 6 // 7 // pin type cylinders. Keying information will be furnished at a later date by the RE/COR.

SPEC WRITER NOTES:

1. When the project requires a new keying system, include following paragraph. For projects at existing facilities use above paragraph.
- C. Keying: Establish a new Great Grandmaster key for this project. Provide removable core type key system as previously described. The manufacturer must furnish code pattern listings so keys may be reproduced by code. Design the new key system with the capacity to relock the existing station and also provide for 25 percent expansion capability beyond this requirement. Submit a keying chart for approval showing proposed keying layout and listing expansion capacity.

1. Keying information will be furnished to the Contractor by the RE/COR.
2. Supply information regarding key control of cylinder locks to manufacturers of equipment having cylinder type locks. Notify RE/COR immediately when and to whom keys or keying information is supplied. Return all such keys to the RE/COR.

## SPEC WRITER NOTES:

1. Contractor must verify with the station personnel, the location of key identification to be stamped on cylinders.

**1.8 APPLICABLE PUBLICATIONS**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by the basic designation only. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

## SPEC WRITER NOTES:

1. Remove reference citations that do not remain in Part 2 or Part 3 of edited specification.
2. Verify and make dates indicated for remaining citations the most current at date of submittal; determine changes from date indicated on the TIL download of the section and modify requirements impacted by the changes.

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

A156.1-13	Butts and Hinges
A156.11-2019	Bored and Pre-assembled Locks and Latches
A156.3-2020	Exit Devices
A156.4-2019	Door Controls (Closers)
A156.5-10	Auxiliary Locks and Associated Products
A156.6-2021	Architectural Door Trim
A156.8-2021	Door Controls-Overhead Stops and Holders
A156.13-2017	Mortise Locks and Latches
A156.15-2021	Release Devices-Closer Holder, Electromagnetic and Electromechanical
A156.16-02	American National Standard for Auxiliary Hardware
A156.18-2020	Materials and Finishes
A156.21-09	Thresholds

- A156.22-12 Door Gasketing and Edge Seal Systems
- A156.23-2017 Electromagnetic Locks
- A156.24-2018 Delayed Egress Locking Systems
- A156.26-2021 Continuous Hinges
- A156.31-2019 Electric Strikes and Frame Mounted Actuators
- C. American Society for Testing and Materials (ASTM):
- F883-13(2022) Padlocks
- D. Builders Hardware Manufacturers Association (BHMA):
- Certified Products Directory 2014
- E. National Fire Protection Association (NFPA):
- 80-13 Fire Doors and Fire Windows
- 101-12 Life Safety Code
- F. Underwriters Laboratories, Inc. (UL):
- Building Materials Directory

## **PART 2 - PRODUCTS**

### SPEC WRITER NOTES:

1. Under "Hardware Sets", schedule special hinges for doors over 1200 mm (4 feet) wide and other special doors. Also schedule special hinges such as spring hinges and strap hinges.

### **2.1 BUTT HINGES**

- A. ANSI A156.1. Provide the following types of butt hinges for the types of doors listed, except where otherwise specified:
1. Exterior Doors: Type A2112 for doors 900 mm (3 feet) wide or less and Type A2111 for doors over 900 mm (3 feet) wide. Provide hinges for exterior doors with non-removable pins.
  2. Interior Doors: Type 8112 for doors 900 mm (3 feet) wide or less and Type A8111 for doors over 900 mm (3 feet) wide.
- B. See Articles "MISCELLANEOUS HARDWARE" and "HARDWARE SETS" for pivots and hinges other than butts specified above and continuous hinges specified below.

### **2.2 CONTINUOUS HINGES**

- A. Continuous, Gear-Type Hinges: Extruded-aluminum, pin-less, geared hinge leaves; joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
- B. ANSI/BHMA A156.26, Grade 1-600.
1. Listed under Category N in BHMA's "Certified Product Directory."

**2.3 DOOR CLOSING DEVICES**

- A. Provide closing devices of one manufacturer //for each type specified.//

**2.4 OVERHEAD CLOSERS**

- A. Conform to ANSI A156.4, Grade 1 and the following:
  1. 50 percent adjustable closing force over minimum value for that closer and have adjustable hydraulic back check effective between 60 degrees and 85 degrees of door opening.
  2. Hold-open feature, where specified.
  3. Size Requirements: Size closers in accordance with manufacturer's recommendations or provide multi-size closers, sizes 1 through 6.

## SPEC WRITER NOTES:

1. When only forged or cast iron closers are permitted, the first numeral of overhead door closer identification number must be changed from "0" to "7" in HARDWARE SETS.
4. Material of closer must be cast aluminum.
5. Steel or malleable iron arm and brackets.
6. Provide with full size cover.
7. Adjustable hydraulic back-check and separate valves for closing and latching speed.

**2.5 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. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.
- 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. Substitute floor stops Type L02141 or L02161 as appropriate, when wall bumpers would not provide an effective door stop.
- E. Where drywall partitions occur, use floor stops, Type L02141 or L02161.
- F. Provide stop Type L02011 or L02181, as applicable for exterior doors.
- G. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.
- H. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.

## 2.6 FLOOR DOOR HOLDERS

- A. Conform to ANSI Standard A156.16. Provide extension strikes for Types L01301 and L01311 holders where necessary.

### SPEC WRITER NOTES:

1. Use construction removable cores on all new projects.
2. Because of the different security requirements found in VA facilities, the designer is advised to discuss these issues with appropriate VA personnel prior to the design phase of the project. The designer is to explain to VA personnel the different types of security locking systems that are currently available, and make recommendations as to what is the best system to be used for each security problem.

## 2.7 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over must have beveled fronts. Lock cylinders must have not less than // six pins // seven pins //. Cylinders for all locksets to be removable core type. // Provide cylinders with construction removable cores and construction master keys. // Cylinder to 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. Lever or lockset must not require disassembly to remove core from lockset. All locksets or latches on double doors with fire label to have latch bolt with 19 mm (3/4 inch) throw. 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, locks and latches must comply with following requirements:
1. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13; Series 1000, minimum Grade 2. Locks and latchsets to be furnished with curved lip strike and wrought box. Lock function F02 to be furnished with emergency tools/keys for emergency entrance. Furnish armored fronts for all mortise locks. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide non-ferrous mortise lock case.
  2. Cylindrical Lock and Latch Sets: Levers must meet ADA (Americans with Disabilities Act) requirements. Cylindrical locksets to be

series 4000 Grade I. Knobs for series 4000 lock and latch sets to have 57 mm (2-1/4 inch) diameters. Where two turn pieces are specified for lock F76, turn piece on inside knob must lock and unlock inside knob, and turn piece on outside knob must 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.)

3. Auxiliary locks specified under hardware sets must conform to ANSI A156.5.

## 2.8 ELECTROMAGNETIC LOCKS

### SPEC WRITER NOTES:

1. Indicate configuration of electromagnetic locks - direct-hold or shear type - and mounting in door hardware sets or on Drawings.
- A. ANSI/BHMA A156.23; electrically powered, of strength and configuration indicated; with electromagnet attached to frame and armature plate attached to door. Listed under Category E in BHMA's "Certified Product Directory."
    1. Type: Full exterior or full interior, as required by application indicated.
    2. Strength Ranking: //1500 lbf (6672 N)// //1000 lbf (4448 N)// //500 lbf (2224 N)//.
    3. Inductive Kickback Peak Voltage: Not more than //53// //0// V.
    4. Residual Magnetism: Not more than //4 lbf (18 N)// //0 lbf (0 N)// to separate door from magnet.
  - B. Delayed-Egress Locks: BHMA A156.24.// Listed under Category G in BHMA's "Certified Product Directory". //
    1. Means of Egress Doors: Lock releases within 15 seconds after applying a force not more than 15 lbf (67 N) for not more than 3 seconds, as required by NFPA 101.
    2. Security Grade: Activated from secure side of door by initiating device.
    3. Movement Grade: Activated by door movement as initiating device.
    4. Lock housing must not project more than 4-inches (101mm) from the underside of the frame head stop.

## 2.9 ELECTRIC STRIKES

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

**2.10 KEYS**

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

<b>Locks/Keys</b>	<b>Quantity</b>
Cylinder locks	2 keys each
Cylinder lock change key blanks	10 each different key way
Master-keyed sets	6 keys each
Grand Master sets	6 keys each
Great Grand Master set	5 keys
Control key	1 key

**2.11 KICK-MOP PLATES**

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates // and door edging // as specified below:
1. Kick-mop plates and armor plates to be metal, Type J100 series, color as required.
  2. Provide kick-mop plates for both sides of each // new // door, except where noted as not required. Kick-mop plates to be 200 mm (8 inches) high. On push side of doors where jamb stop extends to floor, make combination kick-mop plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors to have plates 25 mm (1 inch) less than width of each door. Extend all other combination kick-mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick mop plates to butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.
  3. Kick-mop plates are not required on following door sides:
    - a. Exterior side of exterior doors;
    - b. Closet side of closet doors;
    - c. Storage side of doors to or from storage spaces; and
    - d. Both sides of aluminum entrance doors.

**2.12 EXIT DEVICES**

- A. Conform to ANSI Standard A156.3, Grade 1; type and function are specified in hardware sets. Provide flush with finished floor strikes for vertical rod exit devices in interior of building. Trim to have lever handles similar to locksets, unless otherwise specified.
- B. Exit devices for fire doors must comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.

**2.13 FLUSH BOLTS (LEVER EXTENSION)**

- A. Conform to ANSI A156.16, Type L24081 unless otherwise specified.  
Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors. Modify flush bolts to fit stiles of aluminum doors on double-acting doors.
- B. Face plates for cylindrical strikes to be rectangular and not less than 25 mm by 63 mm (1 inch by 2-1/2 inches).
- C. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.

**2.14 DOOR PULLS WITH PLATES**

- A. Conform to ANSI A156.6. Pull plate 90 mm by 350 mm (3-1/2 inches by 14 inches), unless otherwise specified. Cut plates of door pulls for cylinders, or turn pieces where required.

**2.15 PUSH PLATES**

- A. Conform to ANSI A156.6. Metal, Type J302, 200 mm (8 inches) wide by 350 mm (14 inches) high. Provide plastic Type J302 plates 100 mm (4 inches wide by 350 mm (14 inches) high) where push plates are specified for doors with stiles less than 200 mm (8 inches) wide. Cut plates for cylinders, and turn pieces where required.

**2.16 COMBINATION PUSH AND PULL PLATES**

- A. Conform to ANSI 156.6, Type J303; stainless steel 3 mm (1/8 inch) thick, 80 mm (3-1/3 inches) wide by 800 mm (16 inches) high), rounded top and bottom edges. Secure plates to wood doors with 38 mm (1-1/2 inch) long No. 12 wood screws. Cut plates for turn pieces, and cylinders where required. Mount pull in down direction.

**2.17 THRESHOLDS**

- A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. In existing construction, install thresholds in a bed of sealant with machine screws and expansion shields. In new construction, embed aluminum anchors coated with epoxy in concrete to secure thresholds. Furnish thresholds for the full width of the openings.
- B. At exterior doors and any interior doors exposed to moisture, provide threshold with non-slip abrasive finish.

**2.18 WEATHERSTRIPS (FOR EXTERIOR DOORS)**

- A. Conform to ANSI A156.22. Air leakage must not to exceed 0.50 CFM per foot of crack length (0.000774m<sup>3</sup>/s/m).

**2.19 PADLOCKS FOR VARIOUS DOORS, GATES AND HATCHES**

- A. ASTM F883, size 50 mm (2 inch) wide chain; furnish extended shackles as required by job conditions. Provide padlocks, with key cylinders, for each door in following areas as noted.
- B. Key padlocks as follows:
  - 1. Chain Link Fence Gates.
  - 2. Roof Access and Scuttles: Engineer's set.

**2.20 FINISHES**

- A. Exposed surfaces of hardware to have ANSI A156.18 finishes as specified below. Provide finishes on all hinges, pivots, closers, thresholds, etc. as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.
  - B. 626 or 630: Surfaces on exterior and interior of buildings, except where other finishes are specified.
  - C. Miscellaneous Finishes:
    - 1. Hinges - Exterior Doors: 626 or 630.
    - 2. Hinges - Interior Doors: 652 at rated doors or 626.
    - 3. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color // Dull Brass color // Bronze color. //
    - 4. Thresholds: Mill finish aluminum.
    - 5. Other primed steel hardware: 652.
- SPEC WRITER NOTES:
- 1. When hardware is also required for existing buildings, include subparagraph "D".
- D. Hardware Finishes for Existing Buildings: Match finishes of hardware in (similar) existing spaces // except where otherwise specified. //

**2.21 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. Visit the site, verify location of existing hardware and submit locations to RE/COR for approval. //

//A. For new buildings locate hardware on doors at heights specified below unless otherwise noted:

B. Hardware Heights from Finished Floor:

1. Exit devices centerline of strike (where applicable): 1000 mm (40-5/16 inches).
2. Locksets and latch sets centerline of strike: 1000 mm (40-5/16 inches).
3. Deadlocks centerline of strike: 1200 mm (48 inches).
4. Centerline of door pulls: 1000 mm (40 inches).
5. Push plates and push-pull: 1250 mm (50 inches) to top of plate.
6. Push-pull latch: 1000 mm (40-5/16 inches) to centerline of strike.
7. Centerline of deadlock strike: 840 mm (33 inches) when used with push-pull latch.
8. Locate other hardware at standard commercial heights.
9. Locate push and pull plates to prevent conflict with other hardware.

**3.2 INSTALLATION**

- A. Equip and mount closer devices, including those with hold-open features, to provide maximum door opening permitted by building construction or equipment. Closers to be mounted regular arm. Where closers are mounted on doors, mount with sex nuts and bolts; foot fastened to frame with machine screws.
- B. Substitute parallel arm or top jamb mounting for regular arm mounting where the following conditions occur:
  1. Where door swing, in full open position, would be limited to less than 90 degrees due to partition construction and closer location.
  2. Where door to room opens outward into corridor.
  3. Where exterior doors open outward.

SPEC WRITER NOTES:

1. Schedule special hinge sizes for special doors and doors over 1200 mm (4 feet) wide under "Hardware Sets". See Article "Miscellaneous" for hinges for hinged wire guards.

C. Hinge Size Requirements:

Door Thickness	Door Width	Hinge Height
45 mm (1-3/4 inch)	900 mm (3 feet) and less	113 mm (4-1/2 inches)
45 mm (1-3/4 inch)	Over 900 mm (3 feet) but not more than 1200 mm (4 feet)	125 mm (5 inches)
35 mm (1-3/8 inch) (hollow core wood doors)	Not over 1200 mm (4 feet)	113 mm (4-1/2 inches)

D. Provide hinge leaves sufficiently wide to allow doors to swing clear of door frame trim.

SPEC WRITER NOTES:

1. Do not permit reuse of existing hinges unless type and condition of these hinges are verified. Replace existing non-ball bearing hinges with ball bearing type when new door closer is specified for door.

E. Where new hinges are specified for new doors in existing frames or existing doors in new frames, provide sizes of new hinges matching sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by RE/COR. Existing hinges cannot 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.

F. Hinges Required Per Door:

Doors 1500 mm (5 ft) or less in height	2 butts
Doors over 1500 mm (5 ft) high and not over 2280 mm (7 ft 6 in) high	3 butts
Doors over 2280 mm (7 feet 6 inches) high	4 butts
Dutch type doors	4 butts
Doors with spring hinges 1370 mm (4 feet 6 inches) high or less	2 butts
Doors with spring hinges over 1370 mm (4 feet 6 inches)	3 butts

G. Fastenings: Suitable size and type to suit 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 must be of nonferrous metal.

H. After locks have been installed; show in presence of RE/COR that keys operate their respective locks in accordance with keying requirements. (Send keys, Master Key level and above by Registered Mail to the Cemetery Director along with the bitting list. Also send a copy of the invoice to the RE/COR for the records.) Installation of locks which do not meet specified keying requirements will be considered sufficient justification for rejection and replacement of all locks installed on project.

### **3.3 FINAL INSPECTION**

- A. Installer to provide letter to RE/COR 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 HARDWARE SETS**

A. Following sets of hardware correspond to hardware symbols shown on drawings. Where hardware set for a single door is specified for a pair of doors; equip each leaf of such pair of doors with set noted. Only those hardware sets that are shown on drawings will be required. Disregard hardware sets listed in specifications but not shown on drawings.

#### **SPEC WRITER NOTES:**

1. 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.
2. Hardware sets provided by facility type are in accord with Security Door Opening Matrix of the VA Physical Security Design Guidelines, as it applies to the NCA; coordinate with general provisions listed under the MISCELLANEOUS table.

<b>HARDWARE SETS - ADMINISTRATION BUILDING</b>	
<p><u>HW 1</u> (Public Entrance and Exit)</p> <p>Lockset (F04)</p> <p>Power Operator</p> <p>Continuous Hinge or Pivots</p> <p>Magnetic Lock</p> <p>Normal Daytime Operation: Power operated doors (swinging or horizontal sliding) Door activated by motion sensor on interior and exterior</p> <p>After Hours Operation: Power operated doors (swinging or horizontal sliding) Door activated from exterior by card reader or remote release Door activated by motion sensor on interior</p>	<p><u>HW 2</u> (Telecom Rms, Elect Closets and IT Service Closets)</p> <p>Lockset (F07)</p> <p>Card Reader</p> <p>Continuous Hinge</p> <p>Flush Bolts</p> <p>Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Latchbolt released by key outside and lever inside</p>
<p><u>HW 3</u> (Lobby to Building Interior)</p> <p>Lockset (F04)</p> <p>Card Reader</p> <p>Closer</p> <p>Continuous Hinge</p> <p>Electric Strike</p> <p>Flush Bolts</p> <p>Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Card reader releases electric strike Inside lever retracts latchbolt at all times</p>	<p><u>HW 4</u> (Records Stor Closet, incl FAX)</p> <p>Lockset (F07)</p> <p>Card Reader</p> <p>Closer</p> <p>Continuous Hinge</p> <p>Electric Strike</p> <p>Flush Bolts</p> <p>Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Card reader releases electric strike Inside lever retracts latchbolt at all times</p>

<b>HARDWARE SETS - MAINTENANCE/STORAGE BUILDING</b>	
<p><u>HW 5</u> (Pedestrian Entrance) Lockset (F04) Closer Continuous Hinge Mortise Lock</p> <p>Operation at all Times: Outside lever rigid when locked by mechanical device Outside lever free when unlocked by mechanical device Inside lever retracts latchbolt at all times</p>	<p><u>HW 6</u> (Vehicular Entrance) Manual (push button) on interior</p> <p>Operation at all Times: Push button activate motorized door operator or provides access to manual operator</p> <p>Remainder of hardware by overhead door manufacturer</p>
<p><u>HW 7</u> (Equip and Supply Stor Rms) Lockset (F07) Closer Continuous Hinge Flush Bolts Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Latchbolt released from outside by combination lock Inside lever retracts latchbolt at all times</p>	<p><u>HW 8</u> (Telecom Rms and Elect Closets from Corridor) Lockset (F07) Continuous Hinge Flush Bolts Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Latchbolt released by key outside and lever inside</p>

<b>HARDWARE SETS - PUBLIC INFORMATION CENTER</b>	
<p><u>HW 9</u> (Public Entrance and Exit) Lockset (F04) Power Operator Continuous Hinge or Pivots Magnetic Lock</p> <p>Normal Daytime Operation: Power operated doors (swinging or horizontal sliding) Door activated by motion sensor on interior and exterior</p> <p>After Hours Operation: Power operated doors (swinging or horizontal sliding) Door activated from exterior by card reader or remote release Door activated by motion sensor on interior</p>	<p><u>HW 10</u> (Telecom Rms and Elect Closets) Lockset (F07) Continuous Hinge Flush Bolts Mortise Lock</p> <p>Operation at all Times: Outside lever always rigid Latchbolt released by key outside and lever inside</p>

<b>HARDWARE SETS - MISCELLANEOUS</b>	
<u>HW 11</u> (Office) Lockset (F04) Cylinder Butts as required Stop Silencers	<u>HW 12</u> (Storage) Lockset (F07) Cylinder Butts as required Stop Silencers
<u>HW 13</u> (Toilet - Privacy) Lockset (F19) with accessible thumbturn Cylinder Butts as required Stop Silencers Mop Plate (Interior)	<u>HW 14</u> (Exterior Entry - Single) Lockset (F12) Cylinder Closer Butts as required Stop Threshold Weatherstrip Door Bottom Seal Lock Guard Silencer
<u>HW 15</u> (Exterior Toilet - Single) Mortise Deadlock (F18) CylinderButts as required Closer Door pull Push plate Closer Stop Threshold Weatherstrip Door Bottom Seal Silencers Mop Plate (Interior)	<u>HW 16</u> (Exterior Service - Pair) Lockset (F07) CylinderButts as required Flushbolts Dustproof Strike and Plate Stop Threshold Weatherstripping Astragal Door Bottom Seals Head Rain Drip Lockguard Silencers
<u>HW 17</u> (Corridor) Lockset (F05)Butts as required Stop Silencers	<u>HW 18</u> (Communications) Lockset (F14) Cylinder Butts as required Closer Stop Silencers

<b>HARDWARE SETS - MISCELLANEOUS</b>	
<u>HW 19</u> (Exterior Storage) Lockset (F07) Cylinder Butts as required Stop Threshold Weatherstripping Door Bottom Seal Lockguard Silencers	<u>HW 20</u> (Service Pair) Lockset (F07) Cylinder Butts as required Flushbolt Dustproof Strike and Plate Stop Threshold Silencers
<u>HW 21</u> (Exterior Entry Pair) Lockset (F12) Cylinder Butts as required Flushbolts Dustproof Strike and Plate Stop Threshold Weatherstripping Astragal Door Bottom Seals Head Rain Drip Lock Guard Silencers	<u>HW 22</u> (Wire Mesh Doors) 2 Cylinders
<u>HW 23</u> (Overhead Doors) 2 Padlocks (Keyed to building master key system) Remainder of hardware by overhead door manufacturer	<u>HW 24</u> (Exterior Entry Aluminum/Glass - Single) Geared Hinge Closer Deadlock Cylinder Accessible Thumb-turn Exit Device Push Pull Threshold Remainder of hardware and weatherstripping by door manufacturer

<b>HARDWARE SETS - MISCELLANEOUS</b>	
HW 25 (Exterior Entry Aluminum/Glass Pair) Geared Hinges Closers Deadlocks (Floor Mount) Exit Device Cylinders Pulls Threshold Remainder of Hardware and weatherstripping by door manufacturer	

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