



# **ALBUQUERQUE PUBLIC SCHOOLS**

Facility Design & Construction / Maintenance & Operations

## **REQUIRED DOOR HARDWARE & LOCKS FOR APS CONSTRUCTION**

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February 8, 2008  
Updated February 11, 2014

ALBUQUERQUE PUBLIC SCHOOLS  
STRUCTURAL DEPARTMENT

**REQUIRED DOOR HARDWARE & LOCKS  
FOR APS CONSTRUCTION**

- Exit Devices – Precision Series 2100/F12100, FL2200 LBR, US26D Schlage Removable Core Cylinder (1 cylinder per set of doors)
- Center Mullion – Von Duprin key removable – Schlage removable core cylinder.
- Locksets – Schlage ND96PD, ND94PD, ND92PD, ND40S, ND85PD, ND10, ND25, 626RHO. Application as needed.
- Deadbolt Locks – Schlage B663P, 626 (classroom function) where applicable.
- Door Closers – Norton door closures 1601 adjustable interior / Norton 8501 exterior, or fire doors, Application as needed.
- Flush Bolts – Hand operated for double door set-ups. (No automatic bolts)
- Keys – 3 keys per change, Keys stamped “Do Not Duplicate” and key ID#. Keys delivered to APS Lock shop. Lock shop will provide keying instruction. (Original Schlage cylinders and key blanks to be used.)
- Where aluminum doors or aluminum jambs are used they must be heavy duty construction and must have steel reinforcing at all hardware mounting locations. Aluminum doors must be wide stile (min. 6” dimension at top & sides, 10” at bottom) and have a horizontal mullion (min. 6”) at exit device height.

**ITEMS NOT TO BE USED.**

- No continuous geared hinges.
- No vertical rods. (Except on fire doors with magnetic hold-opens, and then exit devices must be “less bottom rod”.)
- No concealed hardware.
- No mortise locks.
- No digital locks.
- No 5-inch backset latches.

**SPECIFICATIONS, CONSULTING & QUESTIONS**

- Design architects shall use the attached standard APS specifications section for “Finish Hardware 08 7100”. Any changes from this standard must be approved by the APS Lock Shop.
- **On all APS projects, design architects shall contact one of the following two hardware specifications consultants, to review the drawings and provide a detailed hardware schedule.** (Neither charges a fee for this service & both know APS standards.)  
**Craig Burns, AHC: office: 505-881-2966, fax: 505-881-8894 cell: 505-206-7043**  
**Steven Sallee, CDC: office: 505-343-9044 x 108 fax: 505-344-2321 cell: 505-235-6866**
- For **Questions** contact the following at the APS Lock Shop:  
Charles Salas: office: (505) 765-5950 ext. 243, cell: 975-6224

Updated: 2/11/2014

## SECTION 08 7100

## FINISH HARDWARE

### PART I – GENERAL

#### 1.01 DESCRIPTION

##### A. Related Work:

1. Door Operators: Section 08 7113 Automatic Door Operators.
2. Threshold Caulking: Section 07 9200 Joint Sealants.

#### 1.02 QUALITY ASSURANCE

- A. **SUPPLIER QUALIFICATIONS:** The hardware supplier must have in their employment a finish hardware consultant, with a minimum of ten years of commercial hardware experience, who shall be responsible for the detailing, scheduling, and ordering of the finish hardware for this project.
- B. **DESIGN CRITERIA:** Provide Underwriter's Laboratory listed hardware for fire or accident hazard where scheduled or required to maintain rating of openings. Comply with requirements of door and door frame labels. Comply with NFPA No. 80 and local codes that are in effect in the area of the project.

#### 1.03 SUBMITTALS

- A. **Hardware Schedule:** Within ten days after receipt of a contract for the finish hardware, prepare a complete schedule and submit seven copies of the hardware schedule with two copies of catalog cuts, highlighted to show each different hardware item to the Architect for review.
- B. Do not order hardware until an approved copy of the schedule is returned to the supplier bearing the approval of the Architect.

This schedule shall indicate the following details:

Door numbers	Frame materials
Location	Hand of door
Size and thickness of door	Degree of opening
Door material	Type of attachment

- C. **Templates:** After receipt of the approved corrected hardware schedule, upon request the hardware supplier shall send a set of templates and corrected hardware schedule to the wood door, metal door, and frame manufactures/suppliers.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hardware to the jobsite only after proper provision for storage has been made.  
**NO DIRECT SHIPMENTS WILL BE ALLOWED.**
- B. Properly package and clearly identify each item relative to the hardware schedule.
- C. The hardware supplier shall authorize their representative to be present when all finish hardware is delivered to the jobsite and shall check-in each item and turn over to the General Trades Contractor for storage in a secure place under lock and key.

#### 1.05 WARRANTY

Copies of warranties are not required. However, supplier shall provide standard manufacturers warranties with the following additional requirements where noted.

1. Warranty against mechanical failure of door closers for a ten year period.
2. Warranty against failure of parts of all hardware except door closers and exit devices for a period of one year.
3. Warranty shall include cylinder locks.

4. Warranty against mechanical failure of exit devices for a period of three years (plus lifetime parts replacement).

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

#### **ALL HARDWARE TO BE 626,630,652 OR SPRAYED ALUMINUM (DULL CHROME)**

A. Butts:	Bommer, Hager, Stanley
B. Exit Devices:	Precision (No Substitutes)
C. Mullions:	Von Duprin (No Substitutes)
D. Door Closers:	Norton (No Substitutes)
E. Locksets:	Schlage (No Substitutes)
F. Thresholds & Weather strip:	National Guard, Pemko, Reese, Zero
G. Stops & Door Trim:	Don-Jo, Ives, Trimco, Rockwood
H. O/H Stops:	Gynn Johnson, ABH, Rixson

OTHER MANUFACTURERS BY PRIOR APPROVAL OF THE ARCHITECT AND LISTED IN AN ADDENDUM.

### 2.02 SCHEDULED HARDWARE

- A. Requirements for design: grade, function, finish, size, and other distinctive qualities of each type of builders hardware are indicated in the hardware schedule at the end of this section. Products are identified by using manufacturers' hardware product numbers.
- B. Manufacturer's product designation: One or more manufacturers are listed for each hardware type required, provide either the product designated or where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements.

### 2.03 MATERIALS AND FABRICATION

- A. Hand of Door: The drawings show the direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.
- B. Base Metals: Produce hardware units of the basic metal and forming method indicated using the manufacturer's standard metal alloy, composition, temper, and hardness. Do not furnish "optional" materials or forming methods for those indicated except as otherwise specified.
- C. Fasteners: Manufacturer hardware to conform to published templates generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping screws except as specifically indicated.
  1. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or if exposed in surfaces of other work to match the finish of such other work as closely as possible including "prepared for paint" in surfaces to receive painted finish.
    - a. Sex Bolts: Install door closer, door holders, and exit devices on mineral core filled rated wood doors by means of thru bolts and sex nuts.
    - b. Do not use thru bolts for installation where the bolt head or the nut on the opposite face is exposed in other work except where it is not feasible to adequately reinforce the work.

## 2.04 BUTT HINGES

- A. Templates: Provide only template-produced units.
- B. Screws: Furnish Phillips flat-head all purpose or machine screws for installation of units except furnish Phillips flat-head all purpose wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated provide hinge pins as follows:
  - 1. Steel Hinges: Steel Pins
  - 2. Non-ferrous Hinges: Stainless steel pins
  - 3. Exterior Doors: Non-removable pins (NRP)
  - 4. Interior Door: Non-rising pins
  - 5. Tips: Flat button and matching plug finished to match leaves
- D. Number of hinges: Provide number of hinges indicated on drawings, but not fewer than three hinges per door leaf.
- E. Height of hinge leaves:
  - 1. 4.5" high, standard weight Typical, except at locations noted in Item 2 below.
  - 2. 5" high, heavy weight Aluminum storefront doors (exterior & interior); student restroom doors; and doors over 3'0" wide.
- F. Width of hinges: Shall be sufficient to clear trim projection when door swings 180 degrees.
- G. All hinges SHALL be made of steel and have steel ball bearings where specified.

## 2.05 KEYING

- A. The hardware supplier shall contact the APS Lock Shop 765-5950 X243 to determine keying requirements for this project.
- B. Proposed key plan shall include expansion potential for the Owner's future requirements (if needed).
- C. All locksets and cylinders SHALL be keyed to a Grand or Master key system and to the instructions as provided by the APS Lock Shop.
- D. Keys Required. Furnish three (3) keys per change. All new and replacement keys shall be stamped "DO NOT DUPLICATE" and with their respective key symbol (AA1, AA2, AA3 etc.). Supplier shall not cut any Master keys for contractor unless authorized by the APS Lock Shop. All Master keys provided to contractor will be from the APS Lock Shop.
- E. All keys shall be made of nickel silver.

## 2.06 CYLINDRICAL TYPE LOCKSETS AND CYLINDERS

- A. All locksets and latches shall be ND Series Schlage heavy duty. Use "Vandlgard" at exterior locations with standard "ND" Series at interior locations.
- B. All steel parts shall be bronze plated or coated with zinc-dichromate to resist rusting and corrosion.
- C. Locksets and cylinders shall have 6 pins.
- D. Provide 3/4" throw at all pairs of doors.
- E. Provide rim and mortise cylinders for exit devices and mullions with interchangeable cores.

## 2.07 DEADLOCKS

- A. Deadlocks shall be B663P (classroom function) unless otherwise required and approved.
- B. All steel parts shall be bronze plated or coated with zinc-dichromate to resist rusting and corrosion.

## 2.07 CLOSER AND DOOR CONTROL DEVICES

- A. Use Norton 8501 at all exterior locations and locations where high use is anticipated. UNI-8501 spring stop arms should be used at exterior doors where a wall stop cannot be utilized and a floor stop might become a tripping hazard. The Norton 1601 closer should be used on rooms such as storage, toilet, janitor and classrooms.
- B. Separate adjusting valves shall be provided for closing speed, latching speed and back check.

## 2.08 EXIT DEVICES

- A. Provide Precision 2100 Series "Apex" exit devices. Provide 1700A pull trim at exterior locations and V3908A lever trim at interior locations. At pairs of exterior doors the RHR leaf will be the active leaf with a pull and cylinder the LHR leaf will be the inactive leaf with dummy (blank) pull.
- B. All pairs of doors shall be equipped with center mullions behind the doors unless hollow metal mullions between the doors are specified. Vertical rod exit devices shall not be used unless approved by the APS Lock Shop or when double egress doors are utilized in the project. When vertical rod exit devices are required (2200 Series "Apex") they shall be installed "less bottom rod".

## 2.09 MISCELLANEOUS DOOR TRIM UNITS

- A. Material shall be stainless steel material to be 0.0050" minimum thickness.
- B. Width of plates shall be 2" less than door width.
- C. Push Plates: Plate shall be 3.5" x 15".
- D. Pull Plates: Plate shall be 3.5" x 15". Grip shall be stainless steel located on center of plate.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. General: All finish hardware shall be installed by General Contractor.
- B. Furnish all items of hardware with attachment screws, bolts, nuts, etc., as required to attach hardware to type of material involved and with finish to match hardware with which they are to be used. Make all attachments to metal by template machine screws.
- C. Provide sex nuts and bolts for door closers, forearm shoes of closers, and holding devices.
- D. Attach hardware to masonry or concrete with expansion bolts or similar drilled anchors to develop full strength of attached device.
- E. Run weather-stripping or sound stripping full height of both jambs and full width of head. Run thresholds full width of opening. Run door bottoms full width of doors. Set expansion anchors in solid masonry, not mortar joints. Set thresholds in caulking by sealant contractor.

### 3.02 PROTECTION

- A. Do not install door silencers, kick plates, push plates, door bottoms, and wall stops until after painting is complete. Loosen locksets and panic hardware prior to painting and re-tighten after painting is complete. Mask all hardware or otherwise protect during painting operation.

### 3.03 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilation equipment.
- C. Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finishes during the final adjustment of hardware.
- D. Adjust all closers to meet ADA Requirements for sweep time and opening force. Set the closer's back check valve to slow the doors opening from 85 degrees on.

### 3.04 HARDWARE SCHEDULE

- A. It is intended the following schedule include all items of finish hardware necessary to complete the work; if a discrepancy is found in the schedule, such as a missing item, improper hardware for frame, door, or fire codes, the preamble will be the deciding document.
- B. All items shall be of proper type for attaching securely to type of material on which they occur.
- C. The schedule of materials is as follows:

End of Section