

PROJECT MANUAL

for



VA SAN DIEGO HEALTHCARE SYSTEM RENOVATE BUILDING 1 FIRST FLOOR FOR VOLUNTEER AND PATIENT SERVICES PHASE 3

DEPARTMENT OF VETERANS AFFAIRS
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VA PROJECT NO. 664-09-103

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**DEPARTMENT OF VETERANS AFFAIRS
PROJECT SPECIFICATIONS**

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SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies steel doors, steel frames and related components.
- B. Terms relating to steel doors and frames as defined in ANSI A123.1 and as specified.

1.2 RELATED WORK

- A. Section 05 50 00, METAL FABRICATIONS.
- B. Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS.
- C. Section 08 17 00, MANUAL PUSH UP COILING COUNTERS.
- D. Door Hardware: Section 08 71 00, DOOR HARDWARE.

1.3 TESTING

An independent testing laboratory shall perform testing.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturers Literature and Data: Fire rated doors and frames, showing conformance with NFPA 80 and Underwriters Laboratory, Inc., or Intertek Testing Services or Factory Mutual fire rating requirements.

1.5 SHIPMENT

- A. Prior to shipment label each door and frame to show location, size, door swing and other pertinent information.
- B. Fasten temporary steel spreaders across the bottom of each door frame.

1.6 STORAGE AND HANDLING

- A. Store doors and frames at the site under cover.
- B. Protect from rust and damage during storage and erection until completion.

1.7 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
- L-S-125B..... Screening, Insect, Nonmetallic
- C. Door and Hardware Institute (DHI):
- A115 Series..... Steel Door and Frame Preparation for Hardware, Series A115.1 through A115.17 (Dates Vary)
- D. Steel Door Institute (SDI):
- 113-01..... Thermal Transmittance of Steel Door and Frame Assemblies
- 128-1997..... Acoustical Performance for Steel Door and Frame Assemblies
- A250.8-03..... Standard Steel Doors and Frames
- E. American Society for Testing and Materials (ASTM):
- A167-99(R2004)..... Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
- A568/568-M-07..... Steel, Sheet, Carbon, and High-Strength, Low-alloy, Hot-Rolled and Cold-Rolled
- A1008-08..... Steel, sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy and High Strength Low Alloy with Improved Formability
- B209/209M-07..... Aluminum and Aluminum-Alloy Sheet and Plate
- B221/221M-08..... Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
- D1621-04..... Compressive Properties of Rigid Cellular Plastics
- D3656-07..... Insect Screening and Louver Cloth Woven from Vinyl Coated Glass Yarns
- E90-04..... Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
- F. The National Association Architectural Metal Manufacturers (NAAMM):
- Metal Finishes Manual (1988 Edition)

- G. National Fire Protection Association (NFPA):
80-09..... Fire Doors and Fire Windows
- H. Underwriters Laboratories, Inc. (UL):
Fire Resistance Directory
- I. Intertek Testing Services (ITS):
Certifications Listings...Latest Edition
- J. Factory Mutual System (FM):
Approval Guide

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Stainless Steel: ASTM A167, Type 302 or 304; finish, NAAMM Number 4.
- B. Sheet Steel: ASTM A1008, cold-rolled for panels (face sheets) of doors.
- C. Anchors, Fastenings and Accessories: Fastenings anchors, clips connecting members and sleeves from zinc coated steel.
- D. Aluminum Sheet: ASTM B209/209M.
- E. Aluminum, Extruded: ASTM B221/221M.
- F. Prime Paint: Paint that meets or exceeds the requirements of A250.8.

2.2 FABRICATION GENERAL

- A. GENERAL:
 - 1. Follow SDI A250.8 for fabrication of standard steel doors, except as specified otherwise. Doors to receive hardware specified in Section 08 71 00, DOOR HARDWARE. Tolerances as per SDI A250.8. Thickness, 44 mm (1-3/4 inches), unless otherwise shown.
 - 2. Close top edge of exterior doors flush and seal to prevent water intrusion.
 - 3. When vertical steel stiffeners are used for core construction, fill spaces between stiffeners with mineral fiber insulation.
- B. Standard Duty Doors: SDI A250.8, Level 1, Model 2 of size and design shown. Use for interior locations only. Do not use for stairwell doors, security doors and detention doors.

- C. Heavy Duty Doors: SDI A250.8, Level 2, Model 2 of size and design shown. Core construction types a, d, or f, for interior doors, and, types b, c, e, or f, for exterior doors.
- D. Smoke Doors:
 - 1. Close top and vertical edges flush.
 - 2. Provide seamless vertical edges.
 - 3. Apply Steel astragal to the meeting stile at the active leaf of pair of doors or double egress doors.
 - 4. Provide clearance at head, jamb and sill as specified in NFPA 80.
- E. Fire Rated Doors (Labeled):
 - 1. Conform to NFPA 80 when tested by Underwriters Laboratories, Inc., Inchcape Testing Services, or Factory Mutual for the class of door or door opening shown.
 - 2. Fire rated labels of metal, with raised or incised markings of approving laboratory shall be permanently attached to doors.
 - 3. Close top and vertical edges of doors flush. Vertical edges shall be seamless. Apply steel astragal to the meeting stile of the active leaf of pairs of fire rated doors, except where vertical rod exit devices are specified for both leaves swinging in the same direction.
 - 4. Construct fire rated doors in stairwell enclosures for maximum transmitted temperature rise of 230 °C (450 °F) above ambient temperature at end of 30 minutes of fire exposure when tested in accordance with ASTM E152.

2.3 METAL FRAMES

- A. General:
 - 1. SDI A250.8, 1.3 mm (0.053 inch) thick sheet steel, types and styles as shown or scheduled.
 - 2. Frames for exterior doors: Fabricate from 1.7 mm (0.067 inch) thick galvanized steel conforming to ASTM A525.
 - 3. Frames for labeled fire rated doors and windows where they occur.
 - a. Comply with NFPA 80. Test by Underwriters Laboratories, Inc., Inchcape Testing Services, or Factory Mutual.

- b. Fire rated labels of approving laboratory permanently attached to frames as evidence of conformance with these requirements. Provide labels of metal or engraved stamp, with raised or incised markings.
 - 4. Knocked-down frames are not acceptable.
 - B. Reinforcement and Covers:
 - 1. SDI A250.8 for, minimum thickness of steel reinforcement welded to back of frames.
 - 2. Provide mortar guards securely fastened to back of hardware reinforcements except on lead-lined frames.
 - 3. Where concealed door closers are installed within the head of the door frames, prepare frames for closers and provide 1 mm (0.042 inch) thick steel removable stop sections for access to concealed face plates and control valves, except when cover plates are furnished with closer.
 - C. Terminated Stops: SDI A250.8.
 - D. Glazed Openings and Panel Opening:
 - a. Integral stop on exterior, corridor, or secure side of door.
 - b. Design rabbet width and depth to receive glazing material or panel shown or specified.
 - E. Frame Anchors:
 - 1. Floor anchors:
 - a. Where floor fills occur, provide extension type floor anchors to compensate for depth of fill.
 - b. At bottom of jamb use 1.3 mm (0.053 inch) thick steel clip angles welded to jamb and drilled to receive two 6 mm (1/4 inch) floor bolts. Use 50 mm x 50 mm (2 inch by 2 inch) 9 mm by (3/8 inch) clip angle for lead lined frames, drilled for 9 mm (3/8 inch) floor bolts.
 - c. Where mullions occur, provide 2.3 mm (0.093 inch) thick steel channel anchors, drilled for two 6 mm (1/4 inch) floor bolts and frame anchor screws.
 - d. Where sill sections occur, provide continuous 1 mm (0.042 inch) thick steel rough bucks drilled for 6 mm (1/4 inch) floor bolts and frame anchor screws. Space floor bolts at 50 mm (24 inches) on center.
 - 2. Jamb anchors:

- a. Locate anchors on jambs near top and bottom of each frame, and at intermediate points not over 600 mm (24 inches) apart, except for fire rated frames space anchors as required by labeling authority.
- b. Form jamb anchors of not less than 1 mm (0.042 inch) thick steel unless otherwise specified.
- c. Anchors set in masonry: Use adjustable anchors designed for friction fit against the frame and for extension into the masonry not less than 250 mm (10 inches). Use one of following type:
 - 1) Wire loop type of 5 mm (3/16 inch) diameter wire.
 - 2) T-shape or strap and stirrup type of corrugated or perforated sheet steel.
- d. Anchors for stud partitions: Either weld to frame or use lock-in snap-in type. Provide tabs for securing anchor to the sides of the studs.
- e. Anchors for frames set in prepared openings:
 - 1) Steel pipe spacers with 6 mm (1/4 inch) inside diameter welded to plate reinforcing at jamb stops or hat shaped formed strap spacers, 50 mm (2 inches) wide, welded to jamb near stop.
 - 2) Drill jamb stop and strap spacers for 6 mm (1/4 inch) flat head bolts to pass thru frame and spacers.
- f. Anchors for observation windows and other continuous frames set in stud partitions.
 - 1) In addition to jamb anchors, weld clip anchors to sills and heads of continuous frames over 1200 mm (4 feet) long.
 - 2) Anchors spaced 600 mm (24 inches) on centers maximum.
- g. Modify frame anchors to fit special frame and wall construction and provide special anchors where shown or required.

2.4 TRANSOM PANELS

- A. Fabricate panels as specified for flush doors.
- B. Fabricate bottom edge with rabbet stop to fit top of door where no transom bar occurs.

2.5 LOUVERS

A. General:

1. Sight proof type with stationary blades the full thickness of the door.
2. Design lightproof louvers to exclude passage of light but permit free ventilation.
3. Provide insect screen and wire guards at exterior doors, except where doors are located below completely enclosed areaways, the wire guard is not required.

B. Fabrication:

1. Steel louvers 0.8 mm (0.032 inch) thick for interior doors, and 1.3 mm (0.053 inch) inch thick for exterior doors.
2. Fabricate louvers as complete units. Install in prepared cutouts in doors.
3. Weld stationary blades to frames. Weld louvers into door openings.

C. Screen frames:

1. Frame of either extruded aluminum or tubular aluminum.
2. Fabricate frame to hold wire fabric in a channel with a retaining bar anchor and to mount on surface of door with screws.
3. Do not lap frame over louver opening.
4. Miter corners of frame members and join by concealed mechanical fastenings extending about 57 mm (2-1/4 inches) into ends of each member.
5. Drill frame and doors for screw attachment. Space screws 50 mm (2 inches) from end of each leg of frame and not over 300 mm (12 inches) on center between end screws.
6. Finish: Clear anodized finish, 0.4 mils thick.
7. Insect Screens: Fasten insect screens to interior side of doors with retaining bar against door and not exposed to view.
8. Wire Guards:
 - a. Wire fabric shall be wire guard screen as specified.
 - b. Fasten wire guard to exterior side of door with retaining bar against door and not exposed to view.

2.6 SHOP PAINTING

SDI A250.8.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Plumb, align and brace frames securely until permanent anchors are set.
 - 1. Use triangular bracing near each corner on both sides of frames with temporary wood spreaders at midpoint.
 - 2. Use wood spreaders at bottom of frame if the shipping spreader is removed.
 - 3. Protect frame from accidental abuse.
 - 4. Where construction will permit concealment, leave the shipping spreaders in place after installation, otherwise remove the spreaders after the frames are set and anchored.
 - 5. Remove wood spreaders and braces only after the walls are built and jamb anchors are secured.
- B. Floor Anchors:
 - 1. Anchor the bottom of door frames to floor with two 6 mm (1/4 inch) diameter expansion bolts. Use 9 mm (3/8 inch) bolts on lead lined frames.
 - 2. Power actuated drive pins may be used to secure frame anchors to concrete floors.
- C. Jamb Anchors:
 - 1. Anchors in masonry walls: Embed anchors in mortar. Fill space between frame and masonry wall with grout or mortar as walls are built.
 - 2. Coat frame back with a bituminous coating prior to lining of grout filling in masonry walls.
 - 3. Secure anchors to sides of studs with two fasteners through anchor tabs. Use steel drill screws to steel studs.
 - 4. Frames set in prepared openings of masonry or concrete: Expansion bolt to wall with 6 mm (1/4 inch) expansion bolts through spacers. Where subframes or rough bucks are used, 6 mm (1/4 inch) expansion bolts on 600 mm (24 inch) centers or power activated drive pins 600 mm (24 inches) on centers. Secure two piece frames to subframe or rough buck with machine screws on both faces.

- D. Install anchors for labeled fire rated doors to provide rating as required.
- E. Frames for Sound Rated Doors: Coordinate to line frames for sound rated doors with insulation.
- F. Overhead Bracing (Lead Lined Frames): Where jamb extensions extend to structure above, anchor clip angles with not less than two, 9 mm (3/8 inch) expansion bolts or power actuated drive pins to concrete slab. Weld to steel overhead members.

3.2 INSTALLATION OF DOORS AND APPLICATION OF HARDWARE

Install doors and hardware as specified in Sections Section 08 11 13, HOLLOW METAL DOORS AND FRAMES and Section 08 71 00, DOOR HARDWARE.

- - - E N D - - -

SECTION 08 14 00

INTERIOR WOOD DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies interior flush doors with prefinish, prefit option.

1.2 RELATED WORK

- A. Door hardware including hardware location (height): Section 08 71 00, DOOR HARDWARE.
- B. Installation of doors and hardware: Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, Section 08 14 00, WOOD DOORS, or Section 08 71 00, DOOR HARDWARE.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
 - 1. Corner section of flush veneered door 300 mm (12 inches) square, showing details of construction, labeled to show grade and type number and conformance to specified standard.
 - 2. Veneer sample 200 mm (8 inch) by 275 mm (11 inch) by 6 mm (1/4 inch) showing specified wood species sanded to receive a transparent finish. Factory finish veneer sample where the prefinished option is accepted.
- C. Shop Drawings:
 - 1. Show every door in project and schedule location in building.
 - 2. Indicate type, grade, finish and size; include pertinent details.
 - 3. Provide information concerning specific requirements not included in the manufacturer's literature and data submittal.
- D. Manufacturer's Literature and Data:
 - 1. Labeled fire rated doors showing conformance with NFPA 80.
- E. Laboratory Test Reports:

1. Screw holding capacity test report in accordance with WDMA T.M.10.
2. Split resistance test report in accordance with WDMA T.M.5.
3. Cycle/Slam test report in accordance with WDMA T.M.7.
4. Hinge-Loading test report in accordance with WDMA T.M.8.

1.4 WARRANTY

- A. Doors are subject to terms of Article titled "Warranty of Construction", FAR clause 52.246-21, except that warranty shall be as follows:
 1. For interior doors, manufacturer's warranty for lifetime of original installation.

1.5 DELIVERY AND STORAGE

- A. Factory seal doors and accessories in minimum of 6 mill polyethylene bags or cardboard packages which shall remain unbroken during delivery and storage.
- B. Store in accordance with WDMA I.S.1-A, J-1 Job Site Information.
- C. Label package for door opening where used.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. Window and Door Manufacturers Association (WDMA):
 - I.S.1-A-04.....Architectural Wood Flush Doors
 - I.S.4-07A.....Water-Repellent Preservative Non-Pressure Treatment for Millwork
 - I.S.6A-01.....Architectural Wood Stile and Rail Doors
 - T.M.5-90.....Split Resistance Test Method
 - T.M.6-08.....Adhesive (Glue Bond) Durability Test Method
 - T.M.7-08.....Cycle-Slam Test Method
 - T.M.8-08.....Hinge Loading Test Method
 - T.M.10-08.....Screwholding Test Method
- C. National Fire Protection Association (NFPA):

80-07.....Protection of Buildings from Exterior
Fire
252-08.....Fire Tests of Door Assemblies

D. ASTM International (ASTM):

E90-04.....Laboratory Measurements of Airborne Sound
Transmission Loss

PART 2 - PRODUCTS

2.1 FLUSH DOORS

A. General:

1. Meet requirements of WDMA I.S.1-A, Extra Heavy Duty.
2. Adhesive: Type II
3. Thickness: 45 mm (1-3/4 inches) unless otherwise shown or specified.

B. Face Veneer:

1. In accordance with WDMA I.S.1-A.
2. One species throughout the project unless scheduled or otherwise shown.
3. For transparent finishes: Premium Grade, cut, and species as selected by the Architect.
 - a. A grade face veneer standard optional.
 - b. Match face veneers for doors for uniform effect of color and grain at joints.
 - c. Door edges shall be same species as door face veneer except maple may be used for stile face veneer on birch doors.
 - d. In existing buildings, where doors are required to have transparent finish, use wood species and grade of face veneers to match adjacent existing doors.
4. For painted finishes: Custom Grade, mill option close grained hardwood, premium or medium density overlay. Do not use Lauan.
5. Factory sand doors for finishing.

C. Wood for stops, louvers, muntins and moldings of flush doors required to have transparent finish:

1. Solid Wood of same species as face veneer, except maple may be used on birch doors.

2. Glazing:
 - a. On non-labeled doors use applied wood stops nailed tight on room side and attached on opposite side with flathead, countersunk wood screws, spaced approximately 125 mm (5 inches) on centers.
 - b. Use stainless steel or dull chrome plated brass screws for exterior doors.
3. Wood Louvers:
 - a. Door manufacturer's standard product, fabricated of solid wood sections.
 - b. Wood Slats: Not less than 5 mm (3/16 inch) thick.
 - c. Stiles routed out to receive slats.
 - d. Secure louvers in prepared cutouts with wood stops.
- D. Stiles and Rails:
 1. Option for wood stiles and rails:
 - a. Composite material having screw withdrawal force greater than minimum performance level value when tested in accordance with WDMA T.M.10.
 2. Provide adequate blocking for bottom of doors having mechanically operated door bottom seal meeting or exceeding the performance duty level per T.M.10 for horizontal door edge screw holding.
- E. Fire rated wood doors:
 1. Fire Performance Rating:
 - a. "B" label, 1-1/2 hours.
 - b. "C" label, 3/4 hour.
 2. Labels:
 - a. Doors shall conform to the requirements of ASTM E2074, or NFPA 252, and, carry an identifying label from a qualified testing and inspection agency for class of door or opening shown designating fire performance rating.
 - b. Metal labels with raised or incised markings.
 3. Performance Criteria for Stiles of doors utilizing standard mortise leaf hinges:

- a. Hinge Loading: WDMA T.M.8. Average of 10 test samples for Extra Heavy Duty doors.
 - b. Direct screw withdrawal: WDMA T.M.10 for Extra Heavy Duty doors. Average of 10 test samples using a steel, fully threaded #12 wood screw.
 - c. Cycle Slam: 1,000,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with WDMA T.M.7.
4. Additional Hardware Reinforcement:
 - a. Provide fire rated doors with hardware reinforcement blocking.
 - b. Size of lock blocks as required to secure hardware specified.
 - c. Top, bottom and intermediate rail blocks shall measure not less than 125 mm (five inches) minimum by full core width.
 - d. Reinforcement blocking in compliance with manufacturer's labeling requirements.
 - e. Mineral material similar to core is not acceptable.
 5. Other Core Components: Manufacturer's standard as allowed by the labeling requirements.
 6. Provide steel frame approved for use in labeled doors for vision panels.
 7. Provide steel astragal on pair of doors.
- F. Smoke Barrier Doors:
1. For glazed openings use steel frames approved for use in labeled doors.
 2. Provide a steel astragal on one leaf of pairs of doors, including double egress doors.
- G. Sound Rated Doors:
1. Fabricated as specified for flush wood doors with additional construction requirements to meet specified sound transmission class (STC).
 2. STC Rating of the door assembly in place when tested in accordance with ASTM E90 by an independent nationally recognized acoustical testing laboratory not less than 36.
 3. Accessories:

- a. Frame Gaskets: Continuous closed cell sponge neoprene with stop adjusters.
- b. Automatic Door Bottom Seal:
 - 1) Steel spring operated, closed cell sponge neoprene metal mounted removable in extruded aluminum housing with a medium matte 0.1 mm (4.0 mil) thick clear Anodized finish.
 - 2) Concealed or Surface Mounted.
- H. Dutch Doors:
 - 1. Consist of two sections, each fabricated as specified for flush doors.
 - 2. Construct shelf as detailed, from clear hardwood stock, or laminated plastic door shelf, same species as face veneer of door.
 - 3. Place shelf on top of lower section of door and support as shown with a pair of wood or wrought steel brackets.
 - 4. Prime steel brackets for finish painting.

2.2 PREFINISH, PREFIT OPTION

- A. Flush doors may be factory machined to receive hardware, bevels, undercuts, cutouts, accessories and fitting for frame.
- B. Factory fitting to conform to specification for shop and field fitting, including factory application of sealer to edge and routings.
- C. Flush doors to receive transparent finish (in addition to being prefit) may be factory finished as follows:
 - 1. WDMA I.S.1-A Section F-3 specification for System TR-4, Conversion Varnish or System TR-5, Catalyzed Vinyl.
 - 2. Use stain when required to produce the finish approved by the Architect.

2.3 IDENTIFICATION MARK:

- A. On top edge of door.
- B. Either a stamp, brand or other indelible mark, giving manufacturer's name, door's trade name, construction of door, code date of manufacture and quality.
- C. Accompanied by either of the following additional requirements:
 - 1. An identification mark or a separate certification including name of inspection organization.

2. Identification of standards for door, including glue type.
3. Identification of veneer and quality certification.
4. Identification of preservative treatment for stile and rail doors.

2.4 SEALING:

Give top and bottom edge of doors two coats of catalyzed polyurethane or water resistant sealer before sealing in shipping containers.

2.5 FACTORY FINISHING

- A. Finish doors at the place of manufacturer. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 1. Finish faces, all four edges, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts and mortises.
- B. Finish doors at factory that are indicated to receive transparent finish.
- C. Transparent Finish:
 1. Grade: Premium.
 2. Finish: WI System (one of the following): Number 4 clear conversion varnish, or 5 catalyzed polyurethane.
 3. Staining: As selected by Architect from manufacturer's full range. Match approved sample.
 4. Effect: Provide either Filled finish or Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores.
 5. Sheen: Satin.

PART 3 - EXECUTION

3.1 DOOR PREPARATION

- A. Field, shop or factory preparation: Do not violate the qualified testing and inspection agency label requirements for fire rated doors.
- B. Clearances between Doors and Frames and Floors:
 1. Maximum 3 mm (1/8 inch) clearance at the jambs, heads, and meeting stiles, and a 19 mm (3/4 inch) clearance at bottom, except as otherwise specified.

2. Maximum clearance at bottom of sound rated doors, light-proofed doors, doors to operating rooms, and doors designated to be fitted with mechanical seal: 10 mm (3/8 inch).
- C. Provide cutouts for special details required and specified.
- D. Rout doors for hardware using templates and location heights specified in Section, 08 71 00 DOOR HARDWARE.
- E. Fit doors to frame, bevel lock edge of doors 3 mm (1/8 inch) for each 50 mm (two inches) of door thickness, undercut where shown.
- F. Immediately after fitting and cutting of doors for hardware, seal cut edges of doors with two coats of water resistant sealer.
- G. Finish surfaces, including both faces, top and bottom and edges of the doors smooth to touch.
- H. Apply a steel astragal on the opposite side of active door on pairs of fire rated doors.
- I. Apply a steel astragal to meeting style of active leaf of pair of doors or double egress smoke doors.

3.2 INSTALLATION OF DOORS APPLICATION OF HARDWARE

Install doors and hardware as specified in this Section.

3.3 DOOR PROTECTION

- A. As door installation is completed, place polyethylene bag or cardboard shipping container over door and tape in place.
- B. Provide protective covering over knobs and handles in addition to covering door.
- C. Maintain covering in good condition until removal is approved by Resident Engineer.

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SECTION 08 31 05

ACCESS DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

This section covers access doors.

1.2 SUBMITTALS

In accordance with Section 01 33 23, SAMPLES AND SHOP DRAWINGS, furnish the following:

A. Shop Drawings:

Access doors, each type, showing construction, location and installation details.

B. Manufacturer's Literature and Data:

Access doors, each type

1.3 APPLICABLE PUBLICATIONS

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.

A. The National Association of Architectural Metal Manufacturers (NAAMM):

Metal Finishes Manual (AMP 500-06)

PART 2 - PRODUCTS

2.1 FABRICATION, GENERAL

A. Fabricate components so as to be straight, square, flat and in same plane where required. Slightly round exposed edges and provide access without burrs, snags and sharp edges. Welds where exposed shall be continuous and ground smooth.

B. Number of locks and non-continuous hinges shall be as required to maintain alignment of panel with frame.

C. Provide anchors or make provisions in frame for anchoring to adjacent construction. Provide size, number and location of anchors as required to secure access door in opening.

2.2 ACCESS DOORS, FLUSH PANEL

A. Door Panel: Form of 0.0747 inch thick steel sheet. Reinforce as required to maintain flat surface.

B. Frame: Form of 0.0598 inch thick steel sheet of depth and configuration to suit material and type of construction where installed. Weld exposed joints in flange and grind smooth.

- C. Hinge: Concealed spring hinge to allow panel to open 175 degrees. Provide removable hinge pin to allow removal of panel from frame.
- D. Lock: Flush, screwdriver operated cam lock.

2.3 FINISH

- A. Steel Surfaces: shall have over the prime coat, a finish coat of baked-on enamel in color and texture to match the finish of the adjacent surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

Install access doors in openings to have sides vertical in wall installations, and parallel to ceiling grid or side walls when installed in ceiling. Set frames so that edge of frames without flanges will finish flush with surrounding finish surfaces. Set frames with flanges to overlap opening and so that the face will be uniformly spaced from the finish surface.

3.2 ANCHORAGE

Secure frames to adjacent construction using anchors attached to the frames or by use of bolts or screws through the frame members. Type, size and number of anchoring device shall be suitable for the material surrounding the opening, and as required to maintain alignment and resist displacement during normal use of the access door and the building.

3.3 ADJUSTMENT

Adjust hardware so that the door panel will open freely, and when closed the door panel will be centered within the frame.

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SECTION 08 33 17

MANUAL PUSH UP COILING COUNTER DOORS

PART 1 -GENERAL

1.1 DESCRIPTION

- A. Section specifies overhead roll up coiling shutters over counter in walls, including frame and counter.
- B. Manual push up operation.

1.2 RELATED WORK

- A. Lock cylinder and keying: Section 08 71 00, DOOR HARDWARE.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data: Shutter, each type. Installation procedures and instructions.
- C. Shop Drawings: Shutter, each type, showing details of construction and installation.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A47-99(R2004).....Malleable Iron Castings
 - A48-03.....Gray Iron Castings
 - A53-06.....Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
 - A167-99(R2004).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip
 - A653-07.....Steel Sheet Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process
 - B209-06.....Aluminum and Aluminum-Alloy Sheet and Plate
 - B221-06.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes

- ## PART 2 - PRODUCTS

- A. Aluminum:
 - 1. Extruded: ASTM B221, alloy 6063-T5.
 - 2. Sheet: ASTM B209.
- B. Stainless Steel: ASTM A167, Type 302 or 304.
- C. Galvanized Repair Compound: Mil. Spec MIL-P-21035.
- D. Primer: Fed. Spec. TT-P-645.
- E. Galvanized Steel: ASTM A653.
- F. Steel Pipe: ASTM A53.
- G. Casting: ASTM A47 or A48.

2.2 FABRICATION

- A. Weld in accordance with AWS applicable code.
- B. Fire Rated Shutter:
 - 1. Integral counter, shutter, and frame type unit for installation with hood and fascia, sloping top, related accessories and components, and automation closing by fusible link.
 - 2. Comply with NFPA 80. The counter shall have Underwriters Laboratories Inc., or other nationally recognized laboratory label for Class B or C opening as shown.
 - 3. Construct for surface mounted installation.
 - 4. Construct of galvanized steel and stainless steel on exposed to view components except counter.
 - 5. Counter: Minimum 2 mm (0.0747-inch) thick stainless steel with flush closed soffits and ends.
 - 6. Curtain:
 - a. Flat type slats, approximately 32 mm (1 1/4-inches) wide.
 - b. Bottom bar equipped with recessed flush handles, recessed slide bolt on one end, key operated cylinder lock on other end and a continuous flexible seal to make contact with counter. Lock cylinder specified in Section 08 71 00, DOOR HARDWARE.
 - 7. Hood and Fascia: Steel Sheet, formed with beads or flanges to prevent deflection.
 - 8. Frame: Frame jamb sections to include guide slots for curtain with receiver for bolts and locks and continuous closure angles.
 - 9. Counterbalance Assembly:
 - a. Spring barrel or shaft of steel pipe of sufficient strength to ensure deflection not exceeding 1 mm (0.03-inch) per 300 mm (1 foot) of span.
 - b. Barrel or shaft house oil-tempered, helically wound steel spring, and rotate on grease-sealed ball or roller-bearing units.
 - c. Spring adjustable from outside.
 - d. Brackets not less than 3 mm (0.125-inch) thick steel designed to form end closure support for head.

10. Manual Push-up operation for curtains less than 2130 mm (7-feet) wide
 - a. Equip shutter with an automatic closing device actuated by fusible link to release at 130 degrees F. located exposed below the ceiling on both sides of opening in accordance with NFPA No. 80.

C. Non-Fire Rated Shutter:

1. Integral counter, shutter, and frame type unit for installation with hood and fascia, sloping top, and related accessories and components required for a complete working installation.
2. Construct for surface mounted installation.
3. Exposed to view components of same metal except as specified.
4. Counter: 2 mm (0.0747-inch) thick stainless steel with flush closed soffits and ends.
5. Frame: Minimum 1.5 mm (0.0598-inch) thick steel jamb sections formed to include guide slots for curtain with receiver for bolts and locks and continuous closure angles.
6. Counterbalance Assembly:
 - a. Spring barrel or shaft of steel pipe of sufficient strength to ensure deflection not exceeding 1 mm (0.03 inch) per 300 mm (1-foot) of span.
 - b. Barrel or shaft house oil-tempered, helically wound steel spring, and rotate on grease-sealed ball or roller bearings.
 - c. Springs adjustable from outside.
7. Brackets: 3 mm (1/8-inch) thick steel plate designed to form end closure support for hood.
8. Operation: Manual Push-up type for curtains less than 2130 mm (7-feet) wide.
9. Curtain:
 - a. Flat type slats approximately 32 mm (1-1/4-inches) wide.
 - b. Bottom bar, equipped with recessed flush handles, recessed slide bolts for locking on one end, key operated cylinder lock on other end, and a continuous flexible seal to make tight contact with counter. Lock cylinder specified in Section 08 71 00, DOOR HARDWARE.

10. Hoods: Formed with beads or flanges to prevent deflection.
11. Prime Painted Galvanized Steel Shutters:
 - a. Manufactures standard shop coat of light colored rust inhibitive prime paint after fabrication.
 - b. Curtain minimum (0.0299-inch) thick galvanized steel.
 - c. Frames: Galvanized Steel.
 - d. Counter: Stainless steel.
12. Aluminum Shutter:
 - a. Curtain: Extruded aluminum, minimum 1.3 mm (0.050-inch) thick, with extruded aluminum bottom angle or bars.
 - b. Frames: Stainless steel.
 - c. Counter: Stainless steel.
13. Stainless Steel Shutter:
 - a. Curtain: 0.8 mm (0.0299-inch) thick stainless steel, with stainless steel bottom angles or bar.
 - b. Frames: Stainless steel.
 - c. Counter: Stainless steel.

2.3 FINISH

- A. Galvanized Steel:
 1. Shop prime painted per NAAMM AMP 501 and 504.
 2. Finish painted under Section 09 91 00, PAINTING.
- B. Aluminum:
 1. Finish in accordance with NAAMM AMP 500 and 501 or 504.
 2. Chemically etched medium matte, with clear anodic coating, AA-C-22A41. Class II Architectural, 0.06 mm (0.4 mils) thick (AMP 501). Class II Architectural, 0.06 mm (0.4 mils) thick. (AMP 501).
 3. Chemically etched medium matte with colored anode coating, AA-C22A42 or AA-C22A44 electrolytically deposited metallic compound) integrally colored coating, Class II, Architectural, 0.4 mils thick (AMP 501)
 4. Fluorocarbon Finish: AAMA 605 (AMP 504)

- C. Stainless Steel: Mechanical finish No. 4 in accordance with NAAMM AMP 500 and AMP 503.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with approved shop drawings and manufacturer's instructions.
- B. Locate anchors and inserts for guides, brackets, supports, hardware, and other accessories and components accurately.
- C. Securely attach guides to adjoining construction with not less than 10 mm (3/8-inch) diameter bolts, spaced near each end and not over 600 mm (24 inches) apart.
 - 1. Use fasteners conforming to ASTM F468 and F593.
 - 2. Use stainless steel bolts with aluminum or stainless steal.
 - 3. Use toggle bolts to frame walls or hollow masonry.
 - 4. Use expansion bolts in solid masonry or concrete.

3.2 REPAIR

Repair damaged zinc-coated surfaces by applying galvanized repair compound in accordance with the manufacturer's directions.

3.3 PROTECTION

- A. Isolate aluminum in contact with or fastened to dissimilar metal other than stainless steel, white bronze or other metals compatible with aluminum by painting the dissimilar or aluminum with a coat of TT-P-645 primer, or by placing an approved caulking compound, or a non-absorptive tape, or gasket between the aluminum and dissimilar metal.
- B. Paint aluminum in contact with masonry or concrete with a coat of TT-P-645.

3.4 ADJUSTING AND CLEANING

- A. Lubricate properly, adjust and demonstrate, to operate freely and as specified.
- B. Clean upon completion.

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SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 DESCRIPTION:

This section specifies aluminum entrance work including storefront construction, hung doors, and other components to make a complete assembly.

1.2 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: (1/2 full scale) showing construction, anchorage, reinforcement, and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Doors, each type.
 - 2. Entrance and Storefront construction.
- D. Samples:
 - 1. Door corner section, 450 mm x 450 mm (18 x 18 inches), of each door type specified, showing vertical and top hinge edges, and door closer reinforcement.
 - 2. Two samples of anodized aluminum or organic finishes of each color showing finish and maximum shade range.
- E. Manufacturer's Certificates:
 - 1. Stating that aluminum has been given specified thickness of anodizing.
 - 2. Indicating manufacturer's qualifications specified.

1.3 QUALITY ASSURANCE:

- A. Approval by Contracting Officer is required of products of proposed manufacturer, or supplier, and will be based upon submission by Contractor certification.
- B. Certify manufacturer regularly and presently manufactures aluminum entrances and storefronts as one of their principal products.

1.4 DELIVERY, STORAGE AND HANDLING:

- A. Deliver aluminum entrance and storefront material to the site in packages or containers; labeled for identification with the manufacturer's name, brand and contents.
- B. Store aluminum entrance and storefront material in weather-tight and dry storage facility.
- C. Protect from damage from handling, weather and construction operations before, during and after installation.

1.5. 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.
- B. American Society for Testing and Materials (ASTM):
 - B209-06.....Aluminum and Aluminum-Alloy Sheet and Plate
 - B221-05.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - E283-04.....Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - E331-00.....Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
 - F468-06.....Nonferrous Bolts, Hex Cap Screws, and Studs for General Use
 - F593-04.....Stainless Steel Bolts, Hex Cap Screws, and Studs
- C. National Association of Architectural Metal Manufacturers (NAAMM):
 - AMP 500 Series....Metal Finishes Manual
- D. American Architectural Manufacturer's Association (AAMA):
 - 2604-05.....High Performance Organic Coatings on Architectural Aluminum Extrusions and Panels
- E. American Welding Society (AWS):
 - D1.2-03.....Structural Welding Code Aluminum

1.6 PERFORMANCE REQUIREMENTS:

- A. Shapes and thickness of framing members shall be sufficient to withstand a design wind load of not less than 30 pounds per

square foot of supported area with a deflection of not more than 1/175 times the length of the member and a safety factor of not less than 1.65 (applied to overall load failure of the unit). Provide glazing beads, moldings, and trim of not less than 1.25 mm (0.050 inch) nominal thickness.

- B. Air Infiltration: When tested in accordance with ASTM E 283, air infiltration shall not exceed 2.63 x 10⁻⁵ cm per square meter (0.06 cubic feet per minute per square foot) of fixed area at a test pressure of 0.30 kPa (6.24 pounds per square foot) 80 kilometers (50 mile) per hour wind.
- C. Water Penetration: When tested in accordance with ASTM E 331, there shall be no water penetration at a pressure of 0.38 kPa (8 pounds per square foot) of fixed area.

PART 2 - PRODUCTS

2.1 ALUMINUM FRAMED STOREFRONT

- A. Manufacturers: Subject to compliance with specified requirements, provide Encore System by Kawneer Company, Inc., or an "or equal" product of one of the following:
 - 1. Armalite Corporatio.
 - 2. Efco Corporation.
 - 3. US Aluminum Curtain Wall.
 - 4. PPG Industries, Inc.
- B. Aluminum, ASTM B209 and B221:
 - 1. Alloy 6063 temper T5 for doors, door frames, fixed glass sidelights, storefronts, and transoms.
 - 2. Alloy 6061 temper T6 for guide tracks for sliding doors and other extruded structural members.
 - 3. For color anodized finish, use aluminum alloy as required to produce specified color.
- C. Thermal Break: Manufacturer standard low conductive material retarding heat flow in the framework, where insulating glass is scheduled.
- D. Fasteners:
 - 1. Aluminum: ASTM F468, Alloy 2024.
 - 2. Stainless Steel: ASTM F593, Alloy Groups 1, 2 and 3.

2.2 FABRICATION:

- A. Fabricate doors, of extruded aluminum sections not less than 3 mm (0.125 inch) thick. Fabricate glazing beads of aluminum not less than 1.0 mm (0.050 inch) thick.

- B. Accurately form metal parts and accurately fit and rigidly assemble joints, except those joints designed to accommodate movement. Seal joints to prevent leakage of both air and water.
- C. Make welds in aluminum in accordance with the recommended practice AWA D1.2. Use electrodes and methods recommended by the manufacturers of the metals and alloys being welded. Make welds behind finished surfaces so as to cause no distortion or discoloration of the exposed side. Clean welded joints of welding flux and dress exposed and contact surfaces.
- D. Make provisions in doors and frames to receive the specified hardware and accessories. Coordinate schedule and template for hardware specified under Section 08 71 00, DOOR HARDWARE. Where concealed closers or other mechanisms are required, provide the necessary space, cutouts, and reinforcement for secure fastening.
- E. Fit and assemble the work at the manufacturer's plant. Mark work that cannot be permanently plant-assembled to assure proper assembly in the field.

2.3 PROTECTION OF ALUMINUM:

- A. Isolate aluminum from contact with dissimilar metals other than stainless steel, white bronze, or zinc by any of the following:
 - 1. Coat the dissimilar metal with two coats of heavy-bodied alkali resistant bituminous paint.
 - 2. Place caulking compound, or non-absorptive tape, or gasket between the aluminum and the dissimilar metal.
 - 3. Paint aluminum in contact with mortar, concrete and plaster, with a coat of aluminum paint primer.

2.4 FRAMES:

- A. Fabricate doors, frames, mullions, transoms, frames for fixed glass and similar members from extruded aluminum not less than 3 mm (0.125 inch) thick.
- B. Provide integral stops and glass rebates and applied snap-on type trim.
- C. Use concealed screws, bolts and other fasteners. Secure cover boxes to frames in back of all lock strike cutouts.
- D. Fabricate framework with thermal breaks in frames where insulating glass is scheduled and specified under Section 08 80 00, GLAZING.

2.5 STILE AND RAIL DOORS:

- A. Nominal 45 mm (1-3/4 inch) thick, with stile and head rail 90 mm (3-1/2 inches) wide, and bottom rail 250 mm (10 inches) wide.

- B. Bevel single-acting doors 3 mm (1/8 inch) at lock, hinge and meeting stile edges. Provide clearances of 2 mm (1/16 inch) at hinge stiles, 3 mm (1/8 inch) at lock stiles and top rails, and 5 mm (3/16 inch) at floors and thresholds. Form glass rebates integrally with stiles and rails. Glazing beads may be formed integrally with stiles and rails or applied type secured with fasteners at 150 mm (six inches) on centers.
- C. Construct doors with a system of welded joints or interlocking dovetail joints between stiles and rails. Clamp door together through top and bottom rails with 9 mm (3/8 inch) primed steel rod extending into the stiles, and having a self-locking nut and washer at each end. Reinforce stiles and rails to prevent door distortion when tie rods are tightened. Provide a compensating spring-type washer under each nut to take up any stresses that may develop. Construct joints between rails and stiles to remain rigid and tight when door is operated.
- D. Weather-stripping: Provide removable, woven pile type (silicone-treated) weather-stripping attached to aluminum or vinyl holder. Make slots for applying weather-stripping integral with doors and door frame stops. Apply continuous weather-stripping to heads, jambs, bottom, and meeting stiles of doors and frames. Install weather-stripping so doors can swing freely and close positively.

2.6 REINFORCEMENT FOR BUILDERS HARDWARE:

- A. Fabricate from stainless steel plates.
- B. Hinge and pivot reinforcing: 4.55 mm (0.1793 inch) thick.
- C. Reinforcing for lock face, flush bolts, concealed holders, concealed or surface mounted closers: 2.66 mm (0.1046 inch) thick.
- D. Reinforcing for all other surface mounted hardware: 1.5 mm (0.0598 inch) thick.

2.7 COLUMN COVERS AND TRIM

- A. Fabricate column covers and trim shown from 1.5 mm (0.0625 inch) thick sheet aluminum of longest available lengths.
- B. Use concealed fasteners.
- C. Provide aluminum stiffener and other supporting members shown or as required to maintain the integrity of the components.

2.8 FINISH

- A. In accordance with NAAMM AMP 500 series, and as selected by the Architect.
- B. Anodized Aluminum:

1. Clear Finish: Chemically etched medium matte, with clear anodic coating, Class I Architectural, 7 mils thick.
2. Color Finish: Chemically etched medium matte, with integrally colored anodic coating, Class I Architectural, 7 mils thick. More than 50 percent variation of the maximum shade range approved will not be accepted in a single component or in adjacent components, stiles, and rails on a continuous series.

C. Fluorocarbon Finish: AAMA 605.2, high performance coating.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Allowable Installation Tolerances: Install work plumb and true, in alignment and in relation to lines and grades shown. Variation of 3 mm (1/8 inch) in 2400 mm (eight feet), non-accumulative, is maximum permissible for plumb, level, warp, bow and alignment.
- B. Anchor aluminum frames to adjoining construction at heads, jams and bottom and to steel supports, and bracing. Anchor frames with stainless steel or aluminum countersunk flathead, expansion bolts or machine screws, as applicable. Use aluminum clips for internal connections of adjoining frame sections.
- C. Where work is installed within masonry or concrete openings, place no parts other than built-in anchors and provision for operating devices located in the floor, until after the masonry or concrete work is completed.
- D. Install hardware specified under Section 08 71 00, DOOR HARDWARE.

3.2 ADJUSTING:

After installation of entrance and storefront work is completed, adjust and lubricate operating mechanisms to ensure proper performance.

3.3 PROTECTION, CLEANING AND REPAIRING:

Remove all mastic smears and other unsightly marks, and repair any damaged or disfiguration of the work. Protect the installed work against damage or abuse.

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SECTION 08 51 13

ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Aluminum windows of type and size shown on the drawings, complete with hardware, related components and accessories.

1.2 DEFINITIONS

- A. Accessories: Mullions, staff beads, casings, closures, trim, moldings, panning systems, sub-sills, clips anchors, fasteners, weather-stripping, and other necessary components required for fabrication and installation of window units.
- B. Uncontrolled Water: Water not drained to the exterior, or water appearing on the room side of the window.

1.3 RELATED WORK

- A. Storefront: Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS.
- B. Glazing: Section 08 80 00, GLAZING.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect windows from damage during handling and construction operations before, during and after installation.
- B. Store windows under cover, setting upright.
- C. Do not stack windows flat.
- D. Do not lay building materials or equipment on windows.

1.5 QUALITY ASSURANCE

- A. Approval by contracting officer is required of products or service of proposed manufacturers and installers.
- B. Approval will be based on submission of certification by Contractor that:
 - 1. Manufacturer regularly and presently manufactures the specified windows as one of its principal products.
 - 2. Installer has technical qualifications, experience, trained personnel and facilities to install specified items.
- C. Provide each type of window produced from one source of manufacture.
- D. Quality Certified Labels or certificate:

1. Architectural Aluminum Manufacturers Association, "AAMA label" affixed to each window indicating compliance with specification.
2. Certificates in lieu of label with copy of recent test report (not more than 4 years old) from an independent testing laboratory and certificate signed by window manufacturer stating that windows provided comply with specified requirements and AAMA 101/I.S.2 for type of window specified.

1.6 SUBMITTAL

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
 1. Minimum of 1/2 full scale.
 2. Identifying parts of window units by name and kind of metal or material, show construction, locking systems, mechanical operators, trim, installation and anchorages.
 3. Include glazing details and standards for factory glazed units.
- C. Manufacturer's Literature and Data: Window.
- D. Certificates:
 1. Certificates as specified in paragraph QUALITY ASSURANCE.
 2. Indicating manufacturers and installers qualifications.
 3. Manufacturer's Certification that windows delivered to project are identical to windows tested.
- E. Test Reports: Copies of test reports as specified in paragraph QUALITY ASSURANCE.
- F. Samples: Provide 150 mm (six-inch) length samples showing finishes, specified.

1.7 WARRANTY

Warrant windows against malfunctions due to defects in thermal breaks, hardware, materials and workmanship, subject to the terms of Article "WARRANTY OF CONSTRUCTION", FAR clause 52.246-21, except provide 10 year warranty period.

1.8 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.

- B. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

90.1-04.....Energy Standard of Buildings
- C. American Architectural Manufacturers Association (AAMA):

101/I.S.2/A440-05.....Windows, Doors, and Unit Skylights
505-98.....Dry Shrinkage and Composite Performance
Thermal Cycling Test Procedures
2605-05.....Superior Performing Organic Coatings on
Architectural Aluminum Extrusions and
Panels
TIR-A8-04.....Structural Performance of Poured and
Debridged Framing Systems
- D. American Society for Testing and Materials (ASTM):

A653/A653M-07.....Steel Sheet, Zinc Coated (Galvanized),
Zinc-Iron Alloy-Coated (Galvannealed) by
the Hot-dip Process

E 90-04.....Test Method for Laboratory Measurement of
Airborne Sound Transmission Loss of
Building Partitions
- E. National Fenestration Rating Council (NFRC):

NFRC 100-04.....Determining Fenestration Product U-
Factors

NFRC 200-04.....Determining Fenestration Product Solar
Heat Gain Coefficient and Visible
Transmittance at Normal Incidence
- F. National Association of Architectural Metal Manufacturers
(NAAMM):

AMP 500 Series.....Metal Finishes Manual

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum Extrusions; Sheet and Plate: AAMA 101/I.S.2.
- B. Sheet Steel, Galvanized: ASTM A653; G90 galvanized coating.
- C. Weather-strips: AAMA 101/I.S.2; except leaf type weather-stripping is not permitted.
- D. Fasteners: AAMA 101/I.S.2. Screws, bolts, nuts, rivets and other fastening devices to be non-magnetic stainless steel.
 - 1. Fasteners to be concealed when window is closed. Where wall thickness is less than 3 mm (0.125 inch) thick,

provide backup plates or similar reinforcements for fasteners.

2. Stainless steel self tapping screws may be used to secure Venetian blind hanger clips, vent guide blocks, friction adjuster, and limit opening device.
 3. Attach locking and hold-open devices to windows with concealed fasteners. Provide reinforcing plates where wall thickness is less than 3 mm (0.125 inch) thick.
- E. Weather-strips: AAMA 101/I.S.2.
- F. Hardware:
1. Locks: Two position locking bolts or cam type tamperproof custodial locks with a single point control located not higher than five feet from floor level. Locate locking devices in the vent side rail. Fastenings for locks and keepers shall be concealed or nonremovable.
 2. Locking Device Strikes: Locate strikes in frame jamb. Strikes shall be adjustable for locking tension. Fabricate strikes from Type 304 stainless steel or white bronze.
 3. Fabricate hinges of noncorrosive metal. Hinges may be either fully concealed when window is closed or semi-concealed with exposed knuckles. All exposed knuckle hinges shall have hospital tips, at both ends. Surface mounted hinges will not be accepted.
 4. Guide Blocks: Fabricate guide blocks of injection molded nylon. Install guide block fully concealed in vent/frame sill.
 5. Hardware for Emergency Ventilation of Windows:
 - a. Provide windows with a hold open linkage for emergency ventilation.
 - b. Hold open hardware shall provide for maximum six inches of window opening and shall include an adjustable friction shoe to provide resistance when closing the window.
 - c. Handles shall be removable.
 6. Hardware for Maintenance Opening of Windows: Opening beyond the six inch position shall be accomplished with a window washers key. The release device shall capture the key when window is in the open position.
 7. Design operating device to prevent opening with standard tools, coins or bent wire devices.

2.2 THERMAL AND CONDENSATION PERFORMANCE

- A. Condensation Resistance Factor (CRF): Minimum CRF of C 45.
- B. Thermal Transmittance:
 - 1. Maximum U value class for insulating glass windows: 50 (U=0.50).
 - 2. Maximum U value class for dual glazed windows: 70 (U=0.70), or as required by ASHRAE 90.1.
- C. Solar Heat Gain Coefficient (SHGC): SHGC shall comply with State or local energy code requirement.

2.3 FABRICATION

- A. Fabrication to exceed or meet requirements of Physical Load Tests, Air Infiltration Test, and Water Resistance Test of AAMA 101/I.S.2.
- B. Glazing:
 - 1. Factory or field glazing optional.
 - 2. Glaze in accordance with Section 08 80 00, GLAZING.
 - 3. Windows reglazable without dismantling sash framing.
 - 4. Design rabbet to suit glass thickness and glazing method specified.
 - 5. Glaze from interior except where not accessible.
 - 6. Provide removable fin type glazing beads.
- C. Trim:
 - 1. Trim includes casings, closures, and panning.
 - 2. Fabricate to shapes shown of aluminum not less than 1.6 mm (0.062 inch) thick
 - 3. Extruded or formed sections, straight, true, and smooth on exposed surfaces.
 - 4. Exposed external corners mitered and internal corners coped; fitted with hairline joints.
 - 5. Reinforce 1.6 mm (0.062 inch) thick members with not less than 3 mm (1/8-inch) thick aluminum.
 - 6. Except for strap anchors, provide reinforcing for fastening near ends and at intervals not more than 305 mm (12 inches) between ends.

7. Design to allow unrestricted expansion and contraction of members and window frames.
 8. Secure to window frames with machine screws or expansion rivets.
 9. Exposed screws, fasteners or pop rivets are not acceptable on exterior of the casing or trim cover system.
- D. Thermal-Break Construction:
1. Manufacturer's Standard.
 2. Low conductance thermal barrier.
 3. Capable of structurally holding sash in position and together.
 4. All Thermal Break Assemblies (Pour & Debridge, Insulbar or others) shall be tested as per AAMA TIR A8 and AAMA 505 for Dry Shrinkage and Composite Performance.
 5. Location of thermal barrier and design of window shall be such that, in closed position, outside air shall not come in direct contact with interior frame of the window.
- E. Mullions: AAMA 101.
- F. Subsills and Stools:
1. Fabricate to shapes shown of not less than 2 mm (0.080 inch) thick extruded aluminum.
 2. One piece full length of opening with concealed anchors.
 3. Sills turned up back edge not less than 6 mm (1/4 inch). Front edge provide with drip.
 4. Sill back edge behind face of window frame. Do not extend to interior surface or bridge thermal breaks.
 5. Do not perforate for anchorage, clip screws, or other requirements.

2.4 FINISH

- A. In accordance with NAAMM AMP 500 series.
- B. Finish exposed aluminum surfaces as follows:
1. Anodized Aluminum:
 - a. Finish in accordance with AMP 501 letters and numbers.

- b. Clear anodized Finish: AA-C22A41 Medium matte, clear anodic coating, Class 1 Architectural, 0.7 mils thick.
- c. Colored anodized Finish: AA-C22A42 (anodized) or AA-C22A44 (electrolytically deposited metallic compound) medium matte, integrally colored coating, Class 1 Architectural, 0.7 mils thick.
 - 1) Dyes not accepted.
 - 2) Coated Aluminum:
 - 3) Variation of more than 50 percent of maximum shade range approved will not be accepted in a single window or in adjacent windows and mullions on a continuous series.
 - a) AMP 501 and 505.
 - b) Fluorocarbon Finish: AAMA 2605, superior performing organic coating.
 - c) Steel: AMP 504.
 - d) Stainless steel: AMP 503.
 - 1. Concealed: 2B or 2D.
 - 2. Exposed: No. 4 unless specified otherwise.
- E. Hardware: Finish hardware exposed when window is in the closed position: Match window color.

PART 3 - EXECUTION

3.1 PROTECTION (DISSIMILAR MATERIALS): AAMA 101/I.S.2.

3.2 INSTALLATION, GENERAL

- A. Install window units in accordance with manufacturer's specifications and recommendations for installation of window units, hardware, operators and other components of work.
- B. Where type, size or spacing of fastenings for securing window accessories or equipment to building construction is not shown or specified, use expansion or toggle bolts or screws, as best suited to construction material.
 - 1. Provide bolts or screws minimum 6 mm (1/4-inch) in diameter.
 - 2. Sized and spaced to resist the tensile and shear loads imposed.

3. Do not use exposed fasteners on exterior, except when unavoidable for application of hardware.
 4. Provide non-magnetic stainless steel Phillips flat-head machine screws for exposed fasteners, where required, or special tamper-proof fasteners.
 5. Locate fasteners to not disturb the thermal break construction of windows.
- C. Set windows plumb, level, true, and in alignment; without warp or rack of frames or sash.
- D. Anchor windows on four sides with anchor clips or fin trim.
1. Do not allow anchor clips to bridge thermal breaks.
 2. Use separate clips for each side of thermal breaks.
 3. Make connections to allow for thermal and other movements.
 4. Do not allow building load to bear on windows.
 5. Use manufacturer's standard clips at corners and not over 600 mm (24 inches) on center.
 6. Where fin trim anchorage is shown build into adjacent construction, anchoring at corners and not over 600 mm (24 inches) on center.

3.3 ADJUST AND CLEAN

- A. Adjust ventilating sash and hardware to provide tight fit at contact points, and at weather-stripping for smooth operation and weathertight closure.
- B. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes.
- C. Remove excess glazing and sealant compounds, dirt, and other substances.
- D. Lubricate hardware and moving parts.
- E. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.
- F. Except when a window is being adjusted or tested, keep locked in the closed position during the progress of work on the project.

- - - E N D - - -

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 11 13, HOLLOW METAL DOORS AND FRAMES, and Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS.
- C. Finishes: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Painting: Section 09 91 00, PAINTING.
- E. Electrical: Division 26, ELECTRICAL.

1.3 GENERAL

- A. All hardware shall 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. 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 metal and 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. The following items shall 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.
5. Floor closers.

1.4 WARRANTY

- A. Automatic door operators shall be subject to the terms of FAR Clause 52.24-21, 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.

1.6 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit 6 copies of the schedule per Section 01 33 23 plus 2 copies to the VAMC Locksmith (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 Resident Engineer for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in Resident Engineer's office until all other similar items have been installed in project, at which time the Resident Engineer 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 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:

Adams-Rite	Adams Rite Mfg. Co.	Pomona, CA
Best	Best Access Systems	Indianapolis, IN
Don-Jo	Don-Jo Manufacturing	Sterling, MA
G.E. Security	GE Security, Inc.	Bradentown, FL
Markar	Markar Architectural Products	Pomona, CA
Pemko	Pemko Manufacturing Co.	Ventura, CA
Rixson	Rixson	Franklin Park, IL
Rockwood	Rockwood Manufacturing Co.	Rockwood, PA
Securitron	Securitron Magnalock Corp.	Sparks, NV
Southern Folger	Southern Folger Detention Equipment Co.	San Antonio, TX
Stanley	The Stanley Works	New Britain, CT
Tice	Tice Industries	Portland, OR
Trimco	Triangle Brass Mfg. Co.	Los Angeles, CA
Zero	Zero Weather Stripping Co.	New York, NY

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 6 pin type. Keying information shall be furnished at a later date by the Resident Engineer.

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

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):

F883-04.....Padlocks

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

A156.3-08.....Exit Devices, Coordinators, and Auto
Flush Bolts

A156.4-08.....Door Controls (Closers)

A156.5-01.....Auxiliary Locks and Associated Products

A156.6-05.....Architectural Door Trim

A156.8-05.....Door Controls-Overhead Stops and Holders

A156.12-05Interconnected Locks and Latches

A156.13-05.....Mortise Locks and Latches Series 1000

A156.14-07Sliding and Folding Door Hardware

A156.15-06.....Release Devices-Closer Holder,
Electromagnetic and Electromechanical

A156.16-08.....Auxiliary Hardware

A156.17-04Self-Closing Hinges and Pivots

A156.18-06.....Materials and Finishes

A156.20-06Strap and Tee Hinges, and Hasps

A156.21-09.....Thresholds

A156.22-05.....Door Gasketing and Edge Seal Systems

A156.23-04.....Electromagnetic Locks

A156.24-03.....Delayed Egress Locking Systems

A156.25-07Electrified Locking Devices

A156.26-06.....Continuous Hinges

A156.28-07Master Keying Systems

A156.29-07Exit Locks and Alarms

A156.30-03High Security Cylinders

A156.31-07Electric Strikes and Frame Mounted
Actuators

A250.8-03.....Standard Steel Doors and Frames

D. National Fire Protection Association (NFPA):

80-10.....Fire Doors and Fire Windows

101-09.....Life Safety Code

E. Underwriters Laboratories, Inc. (UL):

Building Materials Directory (2008)

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. Exterior Doors: Type A2112/A5112 for doors 900 mm (3 feet) wide or less and Type A2111/A5111 for doors over 900 mm (3 feet) wide. Hinges for exterior outswing doors shall have non-removable pins. Hinges for exterior fire-rated doors shall be of stainless steel material.
2. 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 up to 1210 mm (4 feet) high: 2 hinges.
2. Doors 1210 mm (4 feet) to 2260 mm (7 feet 5 inches) high: 3 hinges minimum.
3. Doors greater than 2260 mm (7 feet 5 inches) high: 4 hinges.
4. Doors up to 900 mm (3 feet) wide, standard weight: 114 mm x 114 mm (4-1/2 inches x 4-1/2 inches) hinges.
5. Doors over 900 mm (3 feet) to 1065 mm (3 feet 6 inches) wide, standard weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).
6. 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).
7. Provide heavy-weight hinges where specified.
8. At doors weighing 330 kg (150 lbs.) or more, furnish 127 mm (5 inch) high hinges.

- C. 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. ANSI/BHMA A156.26, Grade 1-600.
 - 1. Listed under Category N in BHMA's "Certified Product Directory."
- B. General: Minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete
- C. Continuous, Barrel-Type Hinges: Hinge with knuckles formed around a Teflon-coated 6.35mm (0.25-inch) minimum diameter pin that extends entire length of hinge.
 - 1. Base Metal for Exterior Hinges: Stainless steel.
 - 2. Base Metal for Interior Hinges: Stainless steel or Aluminum.
 - 3. Base Metal for Hinges for Fire-Rated Assemblies: Stainless steel or Steel.
 - 4. Provide with non-removable pin (hospital tip option) at lockable outswing doors.
 - 5. Where required to clear adjacent casing, trim, and wall conditions and allow full door swing, provide wide throw hinges of minimum width required.
 - 6. Provide with manufacturer's cut-outs for separate mortised power transfers and/or mortised automatic door bottoms where they occur.
 - 7. Where thru-wire power transfers are integral to the hinge, provide hinge with easily removable portion to allow easy access to wiring connections.
 - 8. Where models are specified that provide an integral wrap-around edge guard for the hinge edge of the door, provide manufacturer's adjustable threaded stud and machine screw mechanism to allow the door to be adjusted within the wrap-around edge guard.

2.3 DOOR CLOSING DEVICES

- A. Closing devices shall be products of one manufacturer for each type specified.

2.4 OVERHEAD CLOSERS

- A. Conform to ANSI A156.4, Grade 1.
- B. Closers shall conform to the following:
 - 1. The closer shall have minimum 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. Where specified, closer shall have hold-open feature.
 - 3. Size Requirements: Provide multi-size closers, sizes 1 through 6, except where multi-size closer is not available for the required application.
 - 4. Material of closer body shall be forged or cast.
 - 5. Arm and brackets for closers shall be steel, malleable iron or high strength ductile cast iron.
 - 6. Where closers are exposed to the exterior or are mounted in rooms that experience high humidity, provide closer body and arm assembly of stainless steel material.
 - 7. Closers shall have full size metal cover; plastic covers will not be accepted.
 - 8. Closers shall have adjustable hydraulic back-check, separate valves for closing and latching speed, adjustable back-check positioning valve, and adjustable delayed action valve.
 - 9. Provide closers with any accessories required for the mounting application, including (but not limited to) drop plates, special soffit plates, spacers for heavy-duty parallel arm fifth screws, bull-nose or other regular arm brackets, longer or shorter arm assemblies, and special factory templating. Provide special arms, drop plates, and templating as needed to allow mounting at doors with overhead stops and/or holders.
 - 10. Closer arms or backcheck valve shall not be used to stop the door from overswing, except in applications where a separate wall, floor, or overhead stop cannot be used.
 - 11. Provide parallel arm closers with heavy duty rigid arm.
 - 12. Where closers are to be installed on the push side of the door, provide parallel arm type except where conditions require use of top jamb arm.
 - 13. Provide all surface closers with the same body attachment screw pattern for ease of replacement and maintenance.

14. All closers shall have a 1 ½" (38mm) minimum piston diameter.

2.5 FLOOR CLOSERS AND FLOOR PIVOT SETS

- A. Comply with ANSI A156.4. Provide stainless steel floor plates for floor closers and floor pivots, except where metal thresholds occur. Provide cement case for all floor closers. Floor closers specified for fire doors shall comply with Underwriters Laboratories, Inc., requirements for concealed type floor closers for classes of fire doors indicated on drawings. Hold-open mechanism, where required, shall engage when door is opened 105 degrees, except when door swing is limited by building construction or equipment, the hold-open feature shall engage when door is opened approximately 90 degrees. The hold-open mechanism shall be selectable on/off by turning a screw through the floor plate. Floor closers shall have adjustable hydraulic back-check, adjustable close speed, and adjustable latch speed. Provide closers with delayed action where a hold-open mechanism is not required. Floor closers shall be multi-sized. Single acting floor closers shall also have built in dead stop. Where required, provide closers with special cement cases appropriate for shallow deck installation or where concrete joint lines run through the floor blockout. At offset-hung doors installed in deep reveals, provide special closer arm and spindle to allow for installation. Where stone or terrazzo is applied over the floor closer case, provide closer without floor plate and with extended spindle (length as required) and special cover pan (depth as required) to allow closer to be accessed without damaging the material applied over the closer. Pivots for non-labeled doors shall be cast, forged or extruded brass or bronze.
- B. Where floor closer appears in hardware set provide the following as applicable.
 1. Double Acting Floor Closers: Type C06012.
 2. Single Acting Floor Closer: Type C06021 (center pivoted). (Intermediate pivot is not required).
 3. Single Acting Floor Closers: Type C06041 (offset pivoted).
 4. Single Acting Floor Closer for Labeled Fire Doors: Type C06051 (offset pivoted).
 5. Single Acting Floor Closers For Lead Lined Doors: Type C06071 (offset pivoted).

2.6 COMBINATION CLOSER - HOLDER

- A. Conform to ANSI A156.15; combination closer-holder with built-in electronic release.
- B. Combination closer-holder shall have the following features:

1. Control door closing and latching sequence by hydraulic action.
2. Wiring for 24V DC current. Current draw shall not exceed 0.16 amperes.
3. Combination closer-holder type:
 - a. At doors with 90-110° hold-open point: Single lever arm with slide track closing action, and adjustable hydraulic back-check. Provide tracks with spring-cushion stop assemblies to avoid the necessity of a separate wall or floor stop. Provide with double egress arm where required.
 - b. At doors with over 110° to 175° hold-open point: Single or double lever arm and adjustable hydraulic back-check. Provide with long arms where required for deep frame reveals.
4. Spring power for closing force shall conform to ANSI A156.4 and have 50% spring power adjustment.
5. Size closers per manufacturer's printed catalog recommendations.
6. Hold open mechanism shall hold door open between 85 degrees and 175 degrees depending on wall and frame conditions. Mount device to provide maximum door opening permitted by building construction or equipment.
7. Electronic release shall release door when signaled by smoke detector. Smoke detectors shall not be incorporated as an integral part of door holders. Smoke detectors are specified in the ELECTRICAL Section.
8. All closers to have full covers.
9. All closers shall have a 1 ½" minimum piston diameter and an adjustable back check position valve.

2.7 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. Provide floor stops (Type L02141 or L02161 in office areas; Type L02121 x 3 screws into floor elsewhere. Wall bumpers, where used, must be installed to impact the trim or the door within the leading half of its width. Floor stops, where used, must be installed within 4-inches of the wall face and impact the door within the leading half of its width.
- E. Where drywall partitions occur, use floor stops, Type L02141 or L02161 in office areas, Type L02121 elsewhere.
- F. Provide stop Type L02011, as applicable for exterior doors. At outswing doors where stop can be installed in concrete, provide stop mated to concrete anchor set in 76mm (3-inch) core-drilled hole and filled with quick-setting cement.
- G. Omit stops where floor mounted door holders are required and where automatic operated doors occur.
- H. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.
- I. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.
- J. Provide overhead surface applied stop Type C02541, ANSI A156.8 on patient toilet doors in bedrooms where toilet door could come in contact with the bedroom door.
- K. Provide door stops on doors where combination closer magnetic holders are specified, except where wall stops cannot be used or where floor stops cannot be installed within 4-inches of the wall.
- L. Where the specified wall or floor stop cannot be used, provide concealed overhead stops (surface-mounted where concealed cannot be used).

2.8 OVERHEAD DOOR STOPS and HOLDERS

- A. Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold-open on/off control at all other doors requiring overhead door stops.

2.9 FLOOR DOOR HOLDERS

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

2.10 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 six pins. Cylinders for all locksets shall be removable core type. 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. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13. Mortise locksets shall be series 1000, minimum Grade 2. All locksets and latchsets, except on designated doors in Psychiatric (Mental Health) areas, shall have lever handles fabricated from cast stainless steel. No substitute lever material shall be accepted. All locks and latchsets shall be furnished with 122.55 mm (4-7/8-inch) curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8-inch) lip-to-center dimension. Lock function F02 shall be furnished with emergency tools/keys for emergency entrance. All lock cases installed on lead lined doors shall be lead lined before applying final hardware finish. 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 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. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8-inch) lip-to-center dimension. 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.)
 - 3. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.5.

4. Locks on designated doors in Psychiatric (Mental Health) areas shall be paddle type with arrow projection covers and be UL Listed. Provide these locks with paddle in the down position on both sides of the door. Locks shall be fabricated of wrought stainless steel.
5. Privacy locks in non-mental-health patient rooms shall have an inside thumbturn for privacy and an outside thumbturn for emergency entrance. Single occupancy patient privacy doors shall typically swing out; where such doors cannot swing out, provide center-pivoted doors with rescue hardware (see HW-2B).

2.11 PUSH-BUTTON COMBINATION LOCKS

- A. ANSI/BHMA A156.13, Grade 1. Battery operated pushbutton entry.
- B. Construction: Heavy duty mortise lock housing conforming to ANSI/BHMA A156.13, Grade 1. Lever handles and operating components in compliance with the UFAS and the ADA Accessibility Guidelines. Match lever handles of locks and latchsets on adjacent doors.
- C. Special Features: Key override to permit a master keyed security system and a pushbutton security code activated passage feature to allow access without using the entry code.

2.12 ELECTROMAGNETIC LOCKS

- 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).
 3. Inductive Kickback Peak Voltage: Not more than 53.
 4. Residual Magnetism: Not more than 4 lbf (18 N) to separate door from magnet.
- B. Delayed-Egress Locks: BHMA A156.24.
 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. The lock housing shall not project more than 4-inches (101mm) from the underside of the frame head stop.

2.13 ELECTRIC STRIKES

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

2.14 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

- B. Psychiatric keys shall be cut so that first two bittings closest to the key shoulder are shallow to provide greater strength at point of greatest torque.

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

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates and door edging 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;
 - b. Exterior side of exterior doors;

- c. Closet side of closet doors;
 - d. Both sides of aluminum entrance 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.
5. Where louver or grille occurs in lower portion of doors, substitute stretcher plate and kick plate in place of armor plate. Size of stretcher plate and kick plate shall be 254 mm (10 inches) high.
6. Provide stainless steel edge guards where so specified at wood doors. Provide mortised type instead of surface type except where door construction and/or ratings will not allow. Provide edge guards of bevel and thickness to match wood door. Provide edge guards with factory cut-outs for door hardware that must be installed through or extend through the edge guard. Provide full-height edge guards except where door rating does not allow; in such cases, provide edge guards to height of bottom of typical lockset armor front. Forward edge guards to wood door manufacturer for factory installation on doors.

2.16 EXIT DEVICES

- A. Conform to ANSI Standard A156.3. Exit devices shall be 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 shall have cast satin stainless steel lever handles of design similar to locksets, unless otherwise specified. Provide key cylinders for keyed operating trim and, where specified, cylinder dogging.
- B. Surface vertical rod panics shall only be provided less bottom rod; provide fire pins as required by exit device and door fire labels. Do not provide surface vertical rod panics at exterior doors.
- C. Concealed vertical rod panics shall be provided less bottom rod at interior doors, unless lockable or otherwise specified; provide fire pins as required by exit device and door fire labels. Where concealed vertical rod panics are specified at exterior doors, provide with both top and bottom rods.

- D. Where removable mullions are specified at pairs with rim panic devices, provide mullion with key-removable feature.
- E. At non-rated openings with panic hardware, provide panic hardware with key cylinder dogging feature.
- F. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.

2.17 FLUSH BOLTS (LEVER EXTENSION)

- A. Conform to ANSI A156.16. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors.
- B. Lever extension manual flush bolts shall only be used at non-fire-rated pairs for rooms only accessed by maintenance personnel.
- C. Face plates for cylindrical strikes shall be rectangular and not less than 25 mm by 63 mm (1 inch by 2-1/2 inches).
- D. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.
- E. Provide extension rods for top bolt where door height exceeds 2184 mm (7 feet 2 inches).

2.18 FLUSH BOLTS (AUTOMATIC)

- A. Conform to ANSI A156.3. Dimension of flush bolts shall conform to ANSI A115. Bolts shall conform to Underwriters Laboratories, Inc., requirements for fire door hardware. Flush bolts shall automatically latch and unlatch. Furnish dustproof strikes conforming to ANSI A156.16 for bottom flushbolt. Face plates for dustproof strike shall be rectangular and not less than 38 mm by 90 mm (1-1/2 by 3-1/2 inches).
- B. At interior doors, provide auto flush bolts less bottom bolt, unless otherwise specified, except at wood pairs with fire-rating greater than 20 minutes; provide fire pins as required by auto flush bolt and door fire labels.

2.19 DOOR PULLS

- 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.

2.20 PUSH PLATES

- A. Conform to ANSI A156.6. Metal, Type J302, 200 mm (8 inches) wide by 350 mm (14 inches) high. Provide metal Type J300 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.

2.21 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, top and bottom edges shall be rounded. 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. Pull shall be mounted down.

2.22 COORDINATORS

- A. Conform to ANSI A156.16. Coordinators, when specified for fire doors, shall comply with Underwriters Laboratories, Inc., requirements for fire door hardware. Coordinator may be omitted on exterior pairs of doors where either door will close independently regardless of the position of the other door. Coordinator may be omitted on interior pairs of non-labeled open where open back strike is used. Open back strike shall not be used on labeled doors. Paint coordinators to match door frames, unless coordinators are plated. Provide bar type coordinators, except where gravity coordinators are required at acoustic pairs. For bar type coordinators, provide filler bars for full width and, as required, brackets for push-side surface mounted closers, overhead stops, and vertical rod panic strikes.

2.23 THRESHOLDS

- A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. In existing construction, thresholds shall be installed in a bed of sealant with ¼-20 stainless steel 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. For thresholds at elevators entrances see other sections of specifications.
- C. At exterior doors and any interior doors exposed to moisture, provide threshold with non-slip abrasive finish.
- D. Provide with miter returns where threshold extends more than 12 mm (0.5 inch) from frame face.

2.24 AUTOMATIC DOOR BOTTOM SEAL AND RUBBER GASKET FOR LIGHT PROOF OR SOUND CONTROL DOORS

- A. Conform to ANSI A156.22. Provide mortise or under-door type, except where not practical. For mortise automatic door bottoms, provide type specific for door construction (wood or metal).

2.25 WEATHERSTRIPS (For Exterior Doors)

- A. Conform to ANSI A156.22. Air leakage shall not to exceed 0.50 CFM per foot of crack length (0.000774m³/s/m).

2.26 MISCELLANEOUS HARDWARE

- A. Access Doors (including Sheet Metal, Screen and Woven Wire Mesh Types): Except for fire-rated doors and doors to Temperature Control Cabinets, equip each single or double metal access door with Lock Type E76213, conforming to ANSI A156.5. Key locks as directed. Ship lock prepaid to the door manufacturer. Hinges shall be provided by door manufacturer.
- B. Cylinders for Various Partitions and Doors: Key cylinders same as entrance doors of area in which partitions and door occur, except as otherwise specified. Provide cylinders to operate locking devices where specified for following partitions and doors:
 - 1. Folding doors and partitions.
 - 2. Wicket door (in roll-up door assemblies).
 - 3. Slide-up doors.
 - 4. Swing-up doors.
 - 5. Fire-rated access doors-Engineer's key set.
 - 6. Doors from corridor to electromagnetic shielded room.
 - 7. Day gate on vault door.
- C. Mutes: Conform to ANSI A156.16. Provide door mutes or door silencers Type L03011 or L03021, depending on frame material, of white or light gray color, on each steel or wood door frame, except at fire-rated frames, lead-lined frames and frames for sound-resistant, lightproof and electromagnetically shielded doors. Furnish 3 mutes for single doors and 2 mutes for each pair of doors, except double-acting doors. Provide 4 mutes or silencers for frames for each Dutch type door. Provide 2 mutes for each edge of sliding door which would contact door frame.

2.27 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 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 or 630.
 3. Pivots: Match door trim.
 4. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color.
 5. Thresholds: Mill finish aluminum.
 6. Cover plates for floor hinges and pivots: 630.
 7. 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. Special Finish: Exposed surfaces of hardware for dark bronze anodized aluminum doors shall have oxidized oil rubbed bronze finish (dark bronze) finish on door closers shall closely match doors.
- F. 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.

2.28 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 Resident Engineer for approval.
- B. Hardware Heights from Finished Floor:
1. Exit devices centerline of strike (where applicable) 1024 mm (40-5/16 inches).

2. Locksets and latch sets centerline of strike 1024 mm (40-5/16 inches).
3. Deadlocks centerline of strike 1219 mm (48 inches).
4. Hospital arm pull 1168 mm (46 inches) to centerline of bottom supporting bracket.
5. Centerline of door pulls to be 1016 mm (40 inches).
6. Push plates and push-pull shall be 1270 mm (50 inches) to top of plate.
7. Push-pull latch to be 1024 mm (40-5/16 inches) to centerline of strike.
8. Locate other hardware at standard commercial heights. 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. At exterior doors, closers shall be mounted on interior side. 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)	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)

- 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 Resident Engineer. 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 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

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 Resident Engineer 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 Resident Engineer 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 Resident/Project Engineer 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 Resident/Project Engineer 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.

ELECTRIC HARDWARE ABBREVIATIONS LEGEND:
ADO = Automatic Door Operator
EMCH = Electro-Mechanical Closer-Holder
MHO = Magnetic Hold-Open (wall- or floor-mounted)
UNK = Unknow

INTERIOR SINGLE DOORS

HW-1

Each Door to Have:

NON-RATED

1	Continuous Hinge	A51031B
1	Push/Pull Plate Set	1894-4 x 1195-1 PULL (TRIMCO), OR EQUAL
1	Kick Plate	J102
1	Mop Plate (@ Inswing Doors)	J102
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
3	Silencers	L03011

HW-1A

Each Door to Have:

RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
		X HOSPITAL TIPS @ INSWING DOORS
1	Latchset	F01
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
		x INSTALL OUTSIDE ROOM
1	Kick Plate	J102
1	Mop Plate (@ Inswing Doors)	J102
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
1	Set Seals	R3C164

HW-1B

Each Door to Have:

NON-RATED/RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL
		X SWING-CLEAR X ADJUSTA-SCREWS
1	Hospital Latch	F01 x PADDLES POINTING DOWN
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Overhead Stop	C01541-ADJUSTABLE
1	Set Seals	R3C164

NO CLOSER REQUIRED DUE TO EXEMPTION FOR PATIENT ROOM DOORS.

HW-1C

THIS SET NOT USED.

HW-1D

Each Door to Have:

NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X SWING-CLEAR X ADJUSTA-SCREWS
1	Hospital Latch	F01 x PADDLES POINTING DOWN
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Mop Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Overhead Stop	C01541-ADJUSTABLE
3	Silencers	L03011

HW-1E

Each Door to Have:

RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X SWING-CLEAR X ADJUSTA-SCREWS
1	Hospital Latch	F01 x PADDLES POINTING DOWN
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Wall Stop (@ Inswing Doors)	L52101 CONVEX
1	Set Self-Adhesive Seals	R0E154

HW-1F

Each Door to Have:

NON-RATED

1	Continuous Hinge	A51031B
1	Latchset	F01
1	Kick Plate	J102
1	Wall Stop	L52101 CONVEX
3	Silencers	L03011

HW-1G

Each Door to Have:

NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Latchset	F01
1	Kick Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Wall Stop	L52101 CONVEX
3	Silencers	L03011
1	Coat Hook	L03121

<u>Each Dwarf Door to Have:</u>		<u>HW-1H</u>	<u>NON-RATED</u>
1	Gate Spring Pivot Hinge	K13311	
1	Secret Gate Latch	602 (ROCKWOOD), OR EQUAL	
1	Wall Stop	L52101 CONVEX	
2	Silencers	L03021	

<u>Each [MHO] Door to Have:</u>		<u>HW-1J</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Latchset	F01	
1	Closer	C02011/C02021 (PT4D, PT4H)	
1	Heavy-Duty Armor Plate	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Magnetic Holder	C00011 TRI-VOLTAGE	
1	Set Self-Adhesive Seals	R0E154	
POWER, WIRING, CONDUIT, AND FIRE ALARM CONNECTION BY DIVISION 26.			

<u>Each Door to Have:</u>		<u>HW-1K</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Hospital Latch	F01 x PADDLES POINTING DOWN	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-1L</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B	
1	Latchset	F01	
1	Kick Plate	J102	
1	Wall Stop	L52101 CONVEX	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-1M</u>	<u>NON-RATED</u>
1	Floor Closer	C06011 (PT8A, PT8J)	
2	Push Plates	J304 8" x 16"	
2	Kick Plates	J102	

VA SAN DIEGO
HEALTHCARE SYSTEM

RENOVATE BUILDING 1 FIRST FLOOR
FOR VOLUNTEER AND PATIENT SERVICES (PHASE 3)
PROJECT NO. 664-09-103

2 Edge Guard (@ Wood Doors) J209M / J212 (VERIFY)
1 Overhead Stop C01541-ADJUSTABLE

HW-1N

Each Door to Have:

NON-RATED

1 Continuous Hinge A51031B
1 Push/Pull Plate Set 1894-4 x 1195-1 PULL (TRIMCO), OR EQUAL
1 Kick Plate J102
1 Mop Plate (@ Inswing Doors) J102
1 Closer C02011/C02021 (PT4D, PT4F, PT4H)
1 Floor Stop L02121 x 3 FASTENERS
3 Silencers L03011

HW-1P

Each Lead-Lined Door to Have:

NON-RATED

1 Floor Closer C6062 (PT8A, PT8G, PT8M)
2 Push Plates J304 8" x 16"
2 Kick Plates J102
2 Edge Guard (@ Wood Doors) J209M / J212 (VERIFY)
1 Overhead Stop C01541-ADJUSTABLE

HW-1Q

Each Door to Have:

RATED/NON-RATED

1 Continuous Hinge A51031B
1 Latchset F01
1 Kick Plate J102
1 Closer (@ rated doors) C02011/C02021 (PT4D, PT4F, PT4H)
1 Closer (@ non-rated doors) C02051/C02061 (PT4D, PT4H)
1 Wall Stop L52101 CONVEX
1 Threshold J32300 x 57 mm width (2-1/4 inches)
1 Auto Door Bottom R0Y346 - HEAVY DUTY
2 Sets Self-Adhesive Seals R0E154

HW-1R

Each Door to Have:

RATED/NON-RATED

1 Continuous Hinge A51031B
1 Latchset F01
1 Kick Plate J102
1 Closer (@ rated doors) C02011/C02021 (PT4D, PT4F, PT4H)
1 Closer (@ non-rated doors) C02051/C02061 (PT4D, PT4H)
1 Wall Stop L52101 CONVEX
1 Set Self-Adhesive Seals R0E154

<u>Each Door to Have:</u>		<u>HW-2</u>	<u>RATED/NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Keyed Privacy Indicator Lock	F13 x OCCUPANCY INDICATOR	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each [ADO] Door to Have:</u>		<u>HW-2A</u>	<u>RATED/NON-RATED</u>
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Keyed Privacy Indicator Lock	F13 x OCCUPANCY INDICATOR	
1	Electric Strike	E59391 (FAIL-SECURE), 24VDC	
1	Power Supply	Regulated, Filtered, 24VDC, Amperage as required	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.			
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2B</u>	<u>NON-RATED</u>
1	Center Pivot Set	C07042	
1	Privacy Lock	F02-MOD x THUMBTURN BOTH SIDES X OCCUPANCY INDICATOR	
1	Rescue Stop	ES-1 (STANLEY), OR EQUAL	
1	Custom Rescue Strike	CUSTOM DOUBLE-LIPPED (TICE), OR EQUAL	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Wall Stop	L52101 CONVEX	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2C</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy Lock	F02-MOD X OCCUPANCY INDICATOR	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Wall Stop	L52101 CONVEX	
3	Silencers	L03011	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2D</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy Lock	F02-MOD X OCCUPANCY INDICATOR	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Wall Stop	L52101 CONVEX	
1	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2E</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Hospital Privacy Latch	F02-MOD x TURNPIECE BOTH SIDES	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Mop Plate (@ Inswing Doors)	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2F</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy Lock	F02-MOD X OCCUPANCY INDICATOR	
1	Wall Stop	L52101 CONVEX	
3	Silencers	L03011	
1	Coat Hook	L03121	

<u>Each Door to Have:</u>		<u>HW-2G</u>	<u>RATED/NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Keyed Privacy Indicator Lock	F13 x OCCUPANCY INDICATOR	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2H</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Hospital Privacy Latch	F02-MOD x TURNPIECE BOTH SIDES X OCCUPANCY INDICATOR	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
3	Silencers	L03011	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2J</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy Lock	F02-MOD X OCCUPANCY INDICATOR	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Wall Stop	L52101 CONVEX	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-2K</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Hospital Privacy Latch	F02-MOD x TURNPIECE BOTH SIDES X OCCUPANCY INDICATOR	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-3</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Office Lock	F04	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>	<u>HW-3A</u>	<u>NON-RATED</u>
THIS SET NOT USED.		

<u>Each Door to Have:</u>	<u>HW-3B</u>	<u>NON-RATED/RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED
1	Office Lock	F04
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Closer	C02051/C02061 (PT4D, PT4F, PT4H)
		AT NON-RATED
1	Floor Stop	L02121 x 3 FASTENERS
1	Door Viewer	L03221 - 190° (VIEW INTO CORRIDOR)
1	Set Self-Adhesive Seals	R0E154
OMIT VIEWER IF DOOR PROVIDED WITH VISION LITE.		

	<u>HW-3C</u>
THIS SET NOT USED.	

<u>Each Door to Have:</u>	<u>HW-3D</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED
1	Office Lock	F04
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Kick Plate	J102
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154

Each Door to Have: HW-3E NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Office Lock	F04
1	Closer	C02051/C02061 (PT4D, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154
1	Coat Hook	L03121

OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.

Each Door to Have: HW-3F RATED/NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Office Lock	F04
1	Closer	C02051/C02061 (PT4D, PT4H)
1	Closer	CO2011/CO2021 (PT4D, PT4F, PT4H) @ RATED DOOR
1	Kick Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154

Each Door to Have: HW-3G NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Office Lock	F04
1	Closer	C02051/C02061 (PT4D, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
1	Coat Hook	L03121
1	Door Viewer (Mental Health Only)	L03221 - 190° (VIEW INTO CORRIDOR)
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154

OMIT VIEWER IF DOOR PROVIDED WITH VISION LITE.
OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.

Each Door to Have: HW-3H RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Office Lock	F04
1	Closer	CO2011/CO2021 (PT4D, PT4F, PT4H)
1	Kick Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS

1 Sets Self-Adhesive Seals R0E154

HW-3J

Each Door to Have:

NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Office Lock	F04
1	Closer	C02051/C02061 (PT4D, PT4H)
1	Kick Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
1	Set Sound/Light Seals	R0C266
1	Z-Bracket (as required for parallel arm closer)	770SPB (ZERO), OR EQUAL

HW-4

Each Door to Have:

NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Classroom Lock	F08
1	Overhead Stop	C04541
3	Silencers	L03011

HW-4A

Each [ADO] Door to Have:

RATED

1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL
1	Classroom Lock	F08
1	Electric Strike	E59311 (FAIL-SECURE), 24VDC
1	Power Supply	Regulated, Filtered, 24VDC, Amperage as required
1	Kick Plate	J102
1	Mop Plate (@ Inswing Doors)	J102 @ TOILET ROOMS ONLY
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.

POWER TRANSFER FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).

<u>Each Door to Have:</u>		<u>HW-4B</u>	<u>NON-RATED/RATED</u>
1	Continuous Hinge	A51031B	
1	Public Restroom Lock	F09	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop (@ Outswing Doors)	L02121 x 3 FASTENERS	
1	Wall Stop (@ Inswing Doors)	L52101 CONVEX	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
PROVIDE NON-HOLD-OPEN CLOSER AT TOILET ROOMS.			
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-4C</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Hospital Utility Lock	F09 x PADDLES POINTING DOWN	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
1	Set Seals	R3C164	

<u>Each Door to Have:</u>		<u>HW-4D</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Lock	F08	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Mop Plate (@ Inswing Doors)	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop (@ Outswing Doors)	L02121 x 3 FASTENERS	
1	Wall Stop (@ Inswing Doors)	L52101 CONVEX	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4E</u>	<u>NON-RATED/RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Utility Lock	F09	
1	Closer (@ rated doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer (@ non-rated doors)	C02051/C02061 (PT4D, PT4F)	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4F</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Utility Lock	F09	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop (@ Outswing Doors)	L02121 x 3 FASTENERS	
1	Wall Stop (@ Inswing Doors)	L52101 CONVEX	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4G</u>	<u>RATED/NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Utility Lock	F09	
1	Closer (@ Rated Doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer (@ Non-rated Doors)	C02051/C02061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each [MHO] Door to Have:</u>		<u>HW-4H</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Classroom Lock	F08	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Magnetic Holder	C00011 TRI-VOLTAGE	
1	Set Self-Adhesive Seals	R0E154	

POWER, WIRING, CONDUIT, AND FIRE ALARM CONNECTION BY DIVISION 26.

<u>Each Door to Have:</u>		<u>HW-4J</u>	<u>RATED/NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Utility Lock	F09	
1	Closer (@ Rated Doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer (@ Non-rated Doors)	C02051/C02061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4K</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Utility Lock	F09	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4L</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Lock	F08	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
1	Set Sound/Light Seals	R0C266	
1	Z-Bracket (as required for parallel arm closer)	770SPB (ZERO), OR EQUAL	

<u>Each Door to Have:</u>		<u>HW-4M</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Heavy-Duty Armor Plate	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4N</u>	<u>RATED/NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Utility Lock	F09	
1	Closer (@ rated doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer (@ non-rated doors)	C02051/C02061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4P</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4Q</u>	<u>NON-RATED</u>
1	Pivot Set	C07162 x 454KG (1000 LBS) WEIGHT CAPACITY	
1	Intermediate Pivot	C07311	
1	Utility Hospital Lock	F09 x LEAD-LINED x PADDLES POINTING DOWN	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seal	R0E154	

<u>Each [ADO] Door to Have:</u>		<u>HW-4R</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Classroom Lock	F08	
1	Electric Strike	E59311 (FAIL-SECURE), 24VDC	
1	Power Supply	Regulated, Filtered, 24VDC, Amperage as required	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102 @ TOILET ROOMS ONLY	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 mm width (2-1/4 inches)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	

AT TOILET ROOMS, OMIT METAL THRESHOLD; STONE THRESHOLD BY OTHER TRADES.
AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

POWER TRANSFER FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS
PROVIDED BY SECTION 08 71 13).

<u>Each Door to Have:</u>		<u>HW-4S</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Lock	F08	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Heavy-Duty Armor Plate	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4T</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-4U</u>	<u>NON-RATED/RATED</u>
1	Continuous Hinge	A51031B	
1	Public Restroom Lock	F09	
1	Closer	CO2011/CO2021 (PT4D, PT4F, PT4H)	
1	Closer	CO2051/CO2061 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop (@ Outswing Doors)	L02121 x 3 FASTENERS	
1	Wall Stop (@ Inswing Doors)	L52101 CONVEX	
1	Set Self-Adhesive Seals	R0E154	

PROVIDE NON-HOLD-OPEN CLOSER AT TOILET ROOMS.
STONE THRESHOLD BY OTHER TRADES.

<u>Each Lead-Lined Door to Have:</u>		<u>HW-4V</u>	<u>NON-RATED</u>
1	Pivot Set	C07162 x 454KG (1000 LBS) WEIGHT CAPACITY	
1	Intermediate Pivot	CO7311	
1	Utility Hospital Lock	F09 x LEAD-LINED x PADDLES POINTING DOWN	
1	Closer	CO2011/CO2021 (PT4D, PT4F, PT4H) x METAL LEAD-LINED COVER	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Holder-Stop	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seal	R0E154	

<u>Each [ADO] Lead-Lined Door to Have:</u>		<u>HW-4X</u>	<u>NON-RATED</u>
1	Pivot Set	C07162 x 454KG (1000 LBS) WEIGHT CAPACITY	
1	Intermediate Transfer Pivot	CO7311 x 4 WIRE TRANSFER	
1	Utility Hospital Lock	F09 x LEAD-LINED x PADDLES POINTING DOWN	
1	Electric Unlatch Strike	MUNL (SECURITRON), OR EQUAL	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Overhead Stop	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seal	R0E154	

POWER TRANSFER PIVOT IS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION
SENSORS PROVIDED BY SECTION 08 71 13).
AUTO DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13.

HW-4Y

Each [ADO] Door to Have:

NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL
1	Utility Hospital Lock	F09 x PADDLES POINTING DOWN
1	Electric Unlatch Strike	MUNL (SECURITRON), OR EQUAL
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Overhead Stop	C01541-ADJUSTABLE
1	Set Self-Adhesive Seals	R0E154

POWER TRANSFER PIVOT IS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION
SENSORS PROVIDED BY SECTION 08 71 13).

AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

HW-5

Each Door to Have:

RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Storeroom Lock	F07
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Kick Plate	J102 (@ STORAGE, EVM, & HAC ROOMS ONLY)
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-5A

THIS SET NOT USED.

HW-5B

Each Door to Have:

RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Storeroom Lock	F07
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-5C

THIS SET NOT USED.

<u>Each Door to Have:</u>		<u>HW-5D</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Storeroom Lock	F07	
1	Kick Plate	J102 (@ STORAGE, EVM, & HAC ROOMS ONLY)	
1	Floor Stop (@ Inswing Doors)	L02121 x 3 FASTENERS	
1	Wall Stop (@ Outswing Doors)	L52101 CONVEX	
3	Silencers	L03011	

<u>Each Door to Have:</u>		<u>HW-5E</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Armor Plate	J101 x 3.125 MM (0.125 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-5F</u>	<u>RATED/NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Storeroom Lock	F07	
1	Closer (@ Rated Doors)	C02011/C02021 (PT4D, PF4F, PT4H)	
1	Closer (@ Non-Rated Doors)	C02051/C02061 (PT4D, PT4H)	
1	Heavy-Duty Armor Plate	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-5G</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Storeroom Lock	F07	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Dutch Door to Have:</u>		<u>HW-5H</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Dutch Door Bolt	L04161-4" @ Top Leaf	
1	Storeroom Lock	F07 @ Bottom Leaf	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS @ Bottom Leaf	
1	Wall Stop	L01201 @ Top Leaf	
1	Set Self-Adhesive Seals	R0E154	
<u>Each Door to Have:</u>		<u>HW-5J</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Storeroom Lock	F07	
1	Closer	C02011/C02021 (PT4D, PF4F, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
<u>Each Door to Have:</u>		<u>HW-5K</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Storeroom Lock	F07	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
<u>Each Door to Have:</u>		<u>HW-5L</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Security Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
1	Closer	C02051/C02061 (PT4D, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-6</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Exit Device	TYPE 1 F13 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-6A</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
1	Exit Device	TYPE 1 F08 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each [MHO] Door to Have:</u>		<u>HW-6B</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Exit Device	TYPE 1 F08 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02011/C02021 (PT4D, PT4H)	
1	Kick Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Magnetic Holder	C00011 TRI-VOLTAGE	
1	Set Self-Adhesive Seals	R0E154	
POWER, WIRING, CONDUIT, AND FIRE ALARM CONNECTION BY DIVISION 26.			

<u>Each Door to Have:</u>		<u>HW-6C</u>	<u>NON-RATED/RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Exit Device	TYPE 1 F08 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

HW-6D
Each [ADO] Integrated Door to Have: RATED

1 Key Cylinder TYPE AS REQUIRED
ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES
AUTO DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

HW-6E
Each Door to Have: NON-RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Exit Device	TYPE 1 F08 LEVER
1	Key Cylinder	TYPE AS REQUIRED
1	Closer	C02051/C02061 (PT4D, PT4H)
1	Kick Plate	J102
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-6F
Each [ADO] Door to Have: NON-RATED/RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANELS
1	Elec. Exit Device	TYPE 1 F08 LEVER (E04)
1	Key Cylinder	TYPE AS REQUIRED
1	Power Supply	BY EXIT DEVICE MFR. FOR E04 FUNCTION
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

POWER TRANSFER **SHARED BY ELECTRIC PANIC AND** RE-ACTIVATION SENSOR WIRING (RE-
ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).
AUTO DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13.

HW-6G
Each Door to Have: NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Exit Device	TYPE 1 F13 LEVER
1	Key Cylinder	TYPE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154

HW-7

Each Motorized Roll-up Door to Have:

NON-RATED

1 Key Cylinder (for keyswitch) TYPE AS REQUIRED
BALANCE OF HARDWARE BY SECTION 08 33 00, COILING DOORS AND GRILLES

HW-7A

Each Special Door to Have:

NON-RATED

1 Padlock TYPE AS REQUIRED PER 08 71 00 2.29.
BALANCE OF HARDWARE BY DOOR MANUFACTURER.

HW-7B

Each RF Shielded Door to Have:

NON-RATED

1 Key Cylinder TYPE AS REQUIRED
BALANCE OF HARDWARE BY SECTION 13 49 00.

INTERIOR PAIRS OF DOORS

HW-8

Each [MHO] Pair Integrated Doors to Have:

RATED

ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-8A

Each Aluminum Storefront Pair to Have:

NON-RATED

2	Floor Closers	C06041 (PT8A, PT8F, PT8G, PT8J, PT8M)
2	Intermediate Pivots	C07321
2	Push/Pull Bar Sets	J505 - 305 MM (12 INCH) CENTER-TO-CENTER
		PULL
2	Overhead Stops	C01541-ADJUSTABLE

HW-8B

Each Pair to Have:

NON-RATED

2	Continuous Hinge	A51031B
2	Push Plate	J304 8" x 16"
2	Hospital Grip	J401
2	Kick Plate	J102
2	Mop Plate (@ Inswing Doors)	J102
2	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
2	Floor Stop	L02121 x 3 FASTENERS
2	Silencers	L03011

<u>Each Double-Acting Pair to Have:</u>		<u>HW-8C</u>	<u>NON-RATED</u>
2	Double-Acting Floor Closers	C06011 (PT8A, PT8G, PT8J, PT8M)	
4	Push Plates	J304 8" x 16"	
4	Heavy-Duty Armor Plates	J101 x 3.175 MM (0.125 INCH) THICKNESS	
4	Edge Guard (@ Wood Doors)	J209P / J212 (VERIFY)	
2	Overhead Holders	C01511-ADJUSTABLE	

<u>Each [ADO] Aluminum Storefront Pair to Have:</u>		<u>HW-8D</u>	<u>NON-RATED</u>
2	Pivot Sets	C07162	
2	Intermediate Transfer Pivots	C07321 x 4-WIRES	
2	Intermediate Pivots	C07321	
2	Push/Pull Bar Sets	J505 - 305 MM (12 INCH) CENTER-TO-CENTER PULL	
2	Overhead Stops	C01541-ADJUSTABLE	
AUTO DOOR OPERATORS, CONTROLS, AND REACTIVATION SENSORS BY SECTION 08 71 13.11.			
POWER TRANSFERS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).			
120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.			

<u>Each [ADO] Pair to Have:</u>		<u>HW-8E</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFERS X IN-HINGE ACCESS PANEL	
2	Push Plate	J304 8" x 16"	
2	Hospital Grip	J401	
2	Kick Plate	J102	
2	Mop Plate (@ Inswing Doors)	J102	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stop	L02121 x 3 FASTENERS	
2	Silencers	L03011	
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.			
POWER TRANSFERS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).			

<u>Each [ADO] Pair to Have:</u>		<u>HW-8F</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFERS X IN-HINGE ACCESS PANEL	
2	Push Plate	J304 8" x 16"	
2	Hospital Grip	J401	
2	Kick Plate	J102	
2	Mop Plate (@ Inswing Doors)	J102	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottoms	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.			
POWER TRANSFERS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).			

HW-9

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

<u>Each Pair to Have:</u>		<u>HW-10</u>	<u>RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Heavy-Duty Armor Plates	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottoms	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	
INSTALL LOCK TRIM PROTECTOR BAR ON PUSH SIDE OF ACTIVE LEAF TO PROTECT LEVER TRIM.			

<u>Each [ADO] Pair to Have:</u>		<u>HW-10A</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS X 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Electric Unlatch Strike	MUNL (FAIL-SECURE), 24VDC (SECURITRON), OR EQUAL	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottoms	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	

AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.

POWER TRANSFER **SHARED BY ELECTRIC STRIKE AND** RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).

<u>Each Pair to Have:</u>		<u>HW-10B</u>	<u>NON-RATED/RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers (@ non-rated doors)	C02051/C02061 (PT4D, PT4H)	
2	Closers (@ rated doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Heavy-Duty Armor Plates	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	

INSTALL LOCK TRIM PROTECTOR BAR ON PUSH SIDE OF ACTIVE LEAF TO PROTECT LEVER TRIM.

<u>Each Pair to Have:</u>		<u>HW-10C</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Utility Lock	F09	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Kick Plates	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-10D</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Kick Plates	J102	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Lead Lined Pair to Have:</u>		<u>HW-10E</u>	<u>NON-RATED</u>
2	Pivot Sets	C07162 x 454KG (1000 LBS) WEIGHT CAPACITY	
2	Intermediate Pivots	C07311	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT x LEAD-LINED	
1	Classroom Lock	F08 x LEAD-LINED x PADDLES POINTING DOWN	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS X LEAD-LINED	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
4	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-10F</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Heavy-Duty Armor Plates	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
INSTALL LOCK TRIM PROTECTOR BAR ON PUSH SIDE OF ACTIVE LEAF TO PROTECT LEVER TRIM.			

<u>Each Pair to Have:</u>		<u>HW-10G</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Heavy-Duty Armor Plates	J101 x 3.175 MM (0.125 INCH) THICKNESS	
1	Lock Trim Protector Bar	R111LPB-630 (ROCKWOOD), OR EQUAL	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
INSTALL LOCK TRIM PROTECTOR BAR ON PUSH SIDE OF ACTIVE LEAF TO PROTECT LEVER TRIM.			

<u>Each [ADO] Lead-Lined Pair to Have:</u>		<u>HW-10H</u>	<u>RATED/NON-RATED</u>
2	Bottom Pivots	C07162 LESS TOP PIVOT x 454KG (1000 LBS) WEIGHT CAPACITY	
1	Intermediate Pivot	C07311 (MIDDLE OF ACTIVE LEAF)	
1	Intermediate Transfer Pivot	C07311 x 4 WIRE TRANSFER (MIDDLE OF INACTIVE LEAF)	
2	Intermediate Transfer Pivot	C07311 x 4 WIRE TRANSFER (NEAR TOP OF EACH LEAF)	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT X LEAD-LINED	
1	Hospital Utility Lock	F09 x PADDLES POINTING DOWN X LEAD-LINED	
1	Electric Unlatch Strike	MUNL (FAIL-SECURE), 24VDC (SECURITRON), OR EQUAL (LEAD-LINED)	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS X LEAD-LINED	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
4	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Overhead Stops	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seals	R0E154	
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.			
POWER TRANSFER PIVOTS NEAR TOP OF EACH DOOR FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).			

<u>Each [ADO] Pair to Have:</u>		<u>HW-10J</u>	<u>RATED/NON-RATED</u>
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Hospital Lock	F08 x PADDLES POINTING DOWN	
1	Electric Unlatch Strike	*MUNL (FAIL-SECURE), 24VDC (SECURITRON), OR EQUAL	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Overhead Stops	C01541-ADJUSTABLE	
1	Set Self-Adhesive Seals	R0E154	
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.			
POWER TRANSFERS SHARED BY ELECTRIC STRIKE AND RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).			

*AT WOOD PAIRS RATED 45-MINUTES OR MORE, PROVIDE ELECTRIC STRIKE 310-2-3/4 (FOLGER ADAM OR EQUAL) IN LIEU OF SPECIFIC UNLATCH STRIKE.

<u>Each [ADO] Pair to Have:</u>		<u>HW-10K</u>	<u>RATED/NON-RATED</u>
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Electric Unlatch Strike	MUNL (FAIL-SECURE), 24VDC (SECURITRON), OR EQUAL	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.

POWER TRANSFER **SHARED BY ELECTRIC STRIKE AND** RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).

*AT WOOD PAIRS RATED 45-MINUTES OR MORE, PROVIDE ELECTRIC STRIKE 310-2-3/4 (FOLGER ADAM OR EQUAL) IN LIEU OF SPECIFIC UNLATCH STRIKE.

<u>Each Pair to Have:</u>		<u>HW-10L</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Classroom Lock	F08	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Kick Plates	J102	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-10M</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Utility Lock	F09	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Kick Plates	J102	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-11</u>	<u>RATED/NR</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Storeroom Lock	F07	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Kick Plates	J102 (@ STORAGE ROOMS ONLY)	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-11A</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25	
1	Security Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02051/C02061 (PT4D, PT4H)	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-11B</u>	<u>RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Set Auto Flush Bolts	TYPE 25	
1	Storeroom Lock	F07	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-11C</u>	<u>RATED/NR</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT	
1	Storeroom Lock	F07	
1	Coordinator	TYPE 21A	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Kick Plates	J102 (@ STORAGE ROOMS ONLY)	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
2	Auto Door Bottoms	R0Y346 - HEAVY DUTY	
2	Set Self-Adhesive Seals	R0E154	

<u>Each Pair to Have:</u>		<u>HW-12</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Exit Device	TYPE 7 or 8 F01	
1	Exit Device	TYPE 7 or 8 F08 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Set Meeting Stile Astragals	R3E834	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Floor Stops	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

<u>Each [MHO] Pair Integrated Doors to Have:</u>		<u>HW-12A</u>	<u>RATED</u>
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ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-12B

Each [ADO] Pair Integrated Doors to Have:

RATED

1 Key Cylinder TYPE AS REQUIRED
BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

HW-12C

Each [MHO] Pair Integrated Double Egress Doors to Have:

RATED

ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-12D

Each [ADO] Pair Integrated Double Egress Doors to Have:

RATED

ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

HW-12E

Each Pair to Have:

RATED

2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS
1	Exit Device	TYPE 7 or 8 F01
1	Exit Device	TYPE 7 or 8 F08 LEVER
1	Key Cylinder	TYPE AS REQUIRED
1	Set Meeting Stile Astragals	R3E834
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)
2	Kick Plates	J102
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
2	Floor Stops	L02121 x 3 FASTENERS
2	Door Bottom	R0Y434 x NYLON BRUSH INSERT
2	Set Self-Adhesive Seals	R0E154

HW-12F

Each Pair to Have:

RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Exit Device	TYPE 7 or 8 F01
1	Exit Device	TYPE 7 or 8 F08 LEVER
1	Key Cylinder	TYPE AS REQUIRED
1	Set Meeting Stile Astragals	R3E834
2	Closers	C02021 (PT4D, PT4F, PT4H)
2	Floor Stops	L02121 x 3 FASTENERS
2	Door Bottom	R0Y434 x NYLON BRUSH INSERT
2	Sets Self-Adhesive Seals	R0E154

<u>Each Pair to Have:</u>		<u>HW-12G</u>	<u>NON-RATED</u>
2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Exit Device	TYPE 7 or 8 F01	
1	Exit Device	TYPE 7 or 8 F08 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Set Meeting Stile Astragals	R3E834	
2	Closers	C02051/C02071 (PT4D, PT4H)	
2	Kick Plates	J102	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
2	Door Bottom	R0Y434 x NYLON BRUSH INSERT	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each [ADO] Pair to Have:</u>		<u>HW-12H</u>	<u>NON-RATED</u>
2	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 8-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL	
1	Elec. Exit Device	TYPE 7 or 8 F01 (E04)	
1	Elec. Exit Device	TYPE 7 or 8 F08 LEVER (E04)	
1	Key Cylinder	TYPE AS REQUIRED	
1	Power Supply	BY EXIT DEVICE MFR. FOR E04 FUNCTION	
1	Set Meeting Stile Astragals	R3E834	
2	Kick Plates	J102	
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
2	Floor Stops	L02121 x 3 FASTENERS	
2	Door Bottom	R0Y434 x NYLON BRUSH INSERT	
2	Sets Self-Adhesive Seals	R0E154	

POWER TRANSFERS **SHARED BY ELECTRIC PANIC AND** RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).
AUTO DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13.

<u>Each Pair to Have:</u>		<u>HW-12J</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Exit Device	TYPE 7 or 8 F01	
1	Exit Device	TYPE 7 or 8 F13 LEVER	
1	Key Cylinder	TYPE AS REQUIRED	
1	Set Meeting Stile Astragals	R3E834	
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Floor Stops	L02121 x 3 FASTENERS	
2	Door Bottom	R0Y434 x NYLON BRUSH INSERT	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each [ADO] Bi-Parting Automatic Pair to Have:</u>		<u>HW-13</u>	<u>NON-RATED</u>
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ALL HARDWARE BY SECTION 08 42 29.

EXTERIOR SINGLE DOORS

<u>Each Door to Have:</u>		<u>HW-E1</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B	
1	Entry Lock	F11	
1	Latch Protector (outswing dr)	MLP-111 (DON-JO), OR EQUAL	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
1	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	
<u>Each Door to Have:</u>		<u>HW-E2</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B	
1	Classroom Lock	F05	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
1	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	
<u>Each Door to Have:</u>		<u>HW-E3</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS	
1	Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
1	Latch Protector (outswing dr)	MLP-111 (DON-JO), OR EQUAL	
1	Closer	C02011/C02021 (PT4D, PT4H)	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY),	
CUT: HARDWARE			
1	Armor Plate	J101 x 3.125 MM (0.125 INCH) THICKNESS	
1	Overhead Holder	C01511-ADJUSTABLE	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
1	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Door to Have:</u>		<u>HW-E4</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B	
1	Anti-Vandal Pull	1097HASP (TRIMCO), OR EQUAL	
1	Exit Device	TYPE 1 F03 LES TRIM	
1	Key Cylinder	TYPE AS REQUIRED	
1	Closer	C02011 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold	J35130 x SILICONE GASKET	
1	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Roll-up Door to Have:</u>		<u>HW-E5</u>	<u>NON-RATED</u>
1	Padlock or 2 Cylinders	TYPE AS REQUIRED	
BALANCE OF HARDWARE BY SECTION 08 33 00, COILING DOORS AND GRILLES			

EXTERIOR PAIRS OF DOORS

<u>Each Pair to Have:</u>		<u>HW-E6</u>	<u>NON-RATED</u>
2	Continuous Hinge	A51031B	
1	Set Auto Flush Bolts	TYPE 25	
1	Dust Proof Strike	L04021	
1	Entry Lock	F11	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
1	Coordinator	TYPE 21A	
2	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Kick Plate	J102	
2	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
2	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Pair to Have:</u>		<u>HW-E7</u>	<u>NON-RATED</u>
2	Continuous Hinge	A51031B	
1	Set Auto Flush Bolts	TYPE 25	
1	Dust Proof Strike	L04021	
1	Classroom Lock	F05	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
1	Coordinator	TYPE 21A	
2	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Kick Plate	J102	
2	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
2	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Pair to Have:</u>		<u>HW-E8</u>	<u>NON-RATED</u>
2	Continuous Hinge	A51031B	
1	Set Auto Flush Bolts	TYPE 25	
1	Dust Proof Strike	L04021	
1	Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS	
1	Coordinator	TYPE 21A	
2	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
2	Armor Plate	J101 x 3.125 MM (0.125 INCH) THICKNESS	
2	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
2	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Door to Have:</u>		<u>HW-E9</u>	<u>NON-RATED</u>
2	Continuous Hinge	A51031B	
2	Anti-Vandal Pull	1097HASP (-NC @ INACTIVE LEAF) (TRIMCO), OR EQUAL	
1	Exit Device	TYPE 8 F01	
1	Exit Device	TYPE 8 F12 LESS PULL	
1	Key Cylinder	TYPE AS REQUIRED	
1	Set Meeting Stile Astragals	R3E834	
2	Closer	C02011 (PT4D, PT4F, PT4H)	
2	Kick Plate	J102	
2	Floor Stop	1214CK x 1268CK (TRIMCO), OR EQUAL	
1	Threshold	J35130 x SILICONE GASKET	
2	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	

1 Drip R0Y976

HW-E10

Each Sliding Door to Have:

NON-RATED

1 Set Track Hardware TYPE REQUIRED FOR DOOR MATERIAL, WEIGHT,
AND MOUNTING DETAILS (COMPLETE WITH
TRACK, TRACK BRACKETS, HANGERS, GUIDES,
BUMPERS, AND INTERNAL TRACK STOPS)
2 Pulls 1102T (TRIMCO), OR EQUAL
1 Padlock or Sliding Door Lock TYPE AS REQUIRED (PADLOCK) OR MS1850SN-
450 (SLIDING DOOR LOCK) (ADAMS RITE, OR
EQUAL
2 Cylinder (for sliding dr lock) TYPE AS REQUIRED

EXTERIOR SINGLE GATES

HW-G1

Each Traffic Gate to Have:

NON-RATED

Spring Hinge TYPE REQUIRED X STAINLESS STEEL
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES

HW-G2

Each Gate to Have:

NON-RATED

2 Weldable Gate Hinges I-8513 X WELDED OR FASTENED X SHEAR HINGE
LEAVES TO FIT GATE MEMBERS (BROOKFIELD),
OR EQUAL
1 Weldable Lock Box K-BXMOR X TYPE TO FIT LOCK BRAND/MODEL
(KEEDEX), OR EQUAL
1 Utility Lock F09 X NON-FERROUS LOCK CASE
1 Stainless Steel Closer C52011/C22021 (PT4D, PT4F, PT4H)
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES

HW-G3

Each Gate to Have:

NON-RATED

2 Weldable Gate Hinges I-8513 X WELDED OR FASTENED X SHEAR HINGE
LEAVES TO FIT GATE MEMBERS (BROOKFIELD),
OR EQUAL
1 Weldable Lock Box K-BXMOR X TYPE TO FIT LOCK BRAND/MODEL
(KEEDEX), OR EQUAL
1 Storeroom Lock F13-MOD x RIGID OUTSIDE LEVER x KEY
RETRACTS DEADBOLT AND LATCHBOLT
1 Stainless Steel Closer C52011/C22021 (PT4D, PT4F, PT4H)
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES

<u>Each Gate to Have:</u>		<u>HW-G4</u>	<u>NON-RATED</u>
2	Weldable Gate Hinges	I-8513 X WELDED OR FASTENED X SHEAR HINGE LEAVES TO FIT GATE MEMBERS (BROOKFIELD), OR EQUAL	
1	Weldable Panic Box	K-BXED X TYPE TO FIT LOCK BRAND/MODEL (KEEDEEX), OR EQUAL	
1	Anti-Vandal Pull	1097HASP (TRIMCO), OR EQUAL	
1	Rim Panic Device	TYPE 1 F03 LESS TRIM	
1	Cylinder	TYPE AS REQUIRED	
1	Stainless Steel Closer	C52011/C22021 (PT4D, PT4F, PT4H)	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES			

<u>Each Rolling or Swing-Up Gate to Have:</u>		<u>HW-G5</u>	<u>NON-RATED</u>
1	Padlock or 2 Cylinders	TYPE AS REQUIRED	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES			

EXTERIOR PAIRS OF GATES

<u>Each Pair Traffic Gates to Have:</u>		<u>HW-G6</u>	<u>NON-RATED</u>
	Spring Hinge	TYPE REQUIRED X STAINLESS STEEL	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES			

<u>Each Pair Gates to Have:</u>		<u>HW-G7</u>	<u>NON-RATED</u>
4	Weldable Gate Hinges	I-8513 X WELDED OR FASTENED X SHEAR HINGE LEAVES TO FIT GATE MEMBERS (BROOKFIELD), OR EQUAL	
2	Padlockable Cane Bolts with Hold-up Springs	524-P23 x P23SP x 524PL (1 STRIKE @ ACTIVE LEAF; 2 STRIKES AT INACTIVE LEAF) (CROWN INDUSTRIAL), OR EQUAL	
2	Padlocks	TYPE AS REQUIRED	
1	Weldable Lock Box	K-BXMOR X TYPE TO FIT LOCK BRAND/MODEL X K-BXSTR STRIKE BRACKET (KEEDEEX), OR EQUAL	
1	Utility Lock	F09 X NON-FERROUS LOCK CASE	
2	Stainless Steel Closer	C52011/C22021 (PT4D, PT4F, PT4H)	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES.			
INSTALL CANE BOLTS ON PULL SIDE OF EACH LEAF. ACTIVE LEAF CANE BOLT TO HAVE STRIKE IN OPEN POSITION ONLY. INACTIVE LEAF CANE BOLT TO HAVE STRIKES IN BOTH OPEN AND CLOSED POSITIONS.			

<u>Each Pair Gates to Have:</u>		<u>HW-G8</u>	<u>NON-RATED</u>
4	Weldable Gate Hinges	I-8513 X WELDED OR FASTENED X SHEAR HINGE LEAVES TO FIT GATE MEMBERS (BROOKFIELD), OR EQUAL	
2	Padlockable Cane Bolts with Hold-up Springs	524-P23 x P23SP x 524PL (1 STRIKE @ ACTIVE LEAF; 2 STRIKES AT INACTIVE LEAF) (CROWN INDUSTRIAL), OR EQUAL	
2	Padlocks	TYPE AS REQUIRED	
1	Weldable Lock Box	K-BXMOR X TYPE TO FIT LOCK BRAND/MODEL X K-BXSTR STRIKE BRACKET (KEEDEKX), OR EQUAL	
1	Storeroom Lock	F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT	
2	Stainless Steel Closer	C52011/C22021 (PT4D, PT4F, PT4H)	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES.			
INSTALL CANE BOLTS ON PULL SIDE OF EACH LEAF. ACTIVE LEAF CANE BOLT TO HAVE			
STRIKE IN OPEN POSITION ONLY. INACTIVE LEAF CANE BOLT TO HAVE STRIKES IN			
BOTH OPEN AND CLOSED POSITIONS.			

<u>Each Pair Gates to Have:</u>		<u>HW-G9</u>	<u>NON-RATED</u>
2	Weldable Gate Hinges	I-8513 X WELDED OR FASTENED X SHEAR HINGE LEAVES TO FIT GATE MEMBERS (BROOKFIELD), OR EQUAL	
2	Weldable Panic Boxes	K-BXED X TYPE TO FIT LOCK BRAND/MODEL (KEEDEKX), OR EQUAL	
1	Anti-Vandal Pull	1097HASP (-NC AT NON-KEYED PANIC) (TRIMCO), OR EQUAL	
1	Rim Panic Device	TYPE 1 F01	
1	Rim Panic Device	TYPE 1 F03 LESS TRIM	
1	Cylinder	TYPE AS REQUIRED	
2	Stainless Steel Closer	C52011/C22021 (PT4D, PT4F, PT4H)	
BALANCE OF HARDWARE AND FIXED MULLION BY SECTION 32 31 33, CHAIN LINK FENCES			
AND GATES // SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES.			

<u>Each Rolling or Swing-Up Gate to Have:</u>		<u>HW-G10</u>	<u>NON-RATED</u>
1	Padlock or 2 Cylinders	TYPE AS REQUIRED	
BALANCE OF HARDWARE BY SECTION 32 31 33, CHAIN LINK FENCES AND GATES //			
SECTION 32 31 19, DECORATIVE METAL FENCES AND GATES			

RESIDENTIAL UNIT SINGLE DOORS

<u>Each Door to Have:</u>		<u>HW-R1</u>	<u>NON-RATED/RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Guestroom Card Lock	BY OTHER SECTION.	
1	Closer (@ Rated Doors)	C02011 (PT4D, PT4F PT4H)	
1	Floor Stop	L02121 x 3 FASTENERS	
2	Door Viewers	L03221 - 190°	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-R1A</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B	
1	Guestroom Card Lock	BY OTHER SECTION.	
1	Latch Protector (@ O/S Drs)	MLP-111 (DON-JO), OR EQUAL	
1	Closer	C02011/C02021 (PT4D, PT4F PT4H)	
1	Kick Plate	J102	
1	Floor Stop (@ I/S Doors)	L02121 x 3 FASTENERS	
1	Overhead Stop (@ O/S Doors)	C01541-ADJUSTABLE	
1	Threshold (outswing door)	J35130 x SILICONE GASKET	
1	Threshold (inswing door)	ALUMINUM, PER ARCHITECTURAL DETAIL	
1	Door Sweep	90100CNB (PEMKO), OR EQUAL	
1	Set Frame Seals	2891AS X CSK SCREWS (PEMKO), OR EQUAL	
1	Drip	R0Y976	

<u>Each Door to Have:</u>		<u>HW-R2</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Latchset	F75	
1	Base Stop	L02031 x 3 FASTENERS	
3	Silencers	L03011	

<u>Each Door to Have:</u>		<u>HW-R2A</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Push/Pull Plate Set	1894-4 x 1195-1 PULL (TRIMCO), OR EQUAL	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Floor Stop	L02121 x 3 FASTENERS	
3	Silencers	L03011	

<u>Each Door to Have:</u>		<u>HW-R2B</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Latchset	F75	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-R2C</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Push/Pull Plate Set	1894-4 x 1195-1 PULL (TRIMCO), OR EQUAL	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	

<u>Each Door to Have:</u>		<u>HW-R3</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy	F76B	
1	Base Stop	L02031 x 3 FASTENERS	
1	Coat Hook	L03121	
3	Silencers	L03011	

<u>Each Door to Have:</u>		<u>HW-R3A</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Privacy	F76B	
1	Base Stop	L02031 x 3 FASTENERS	
1	Coat Hook	L03121	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
AT TOILET ROOMS, OMIT METAL THRESHOLD; STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-R4</u>	<u>RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED	
1	Classroom Lock	F84	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Base Stop	L02031 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	

HW-R5

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

RESIDENTIAL UNIT PAIRS OF DOORS

HW-R6

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

HW-R7

Each Pair to Have:

NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
2	Dummy Sets	93K02DT (BEST), OR EQUAL
2	Roller Latches	E09091 x MORTISE STRIKE
2	Base Stops	L02031 x 3 FASTENERS
2	Silencers	L03011

HW-R7A

Each Door to Have:

NON-RATED/RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT
1	Guestroom Card Lock	BY OTHER SECTION.
1	Coordinator	TYPE 21A
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS
2	Closer (@ Rated Doors)	C02011 (PT4D, PT4F PT4H)
2	Floor Stop	L02121 x 3 FASTENERS
2	Door Viewers	L03221 - 190°
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
2	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154

SECURITY HARDWARE ABBREVIATIONS LEGEND:

AC = Access Control Device (Card reader, biometric reader, keypad, etc.)
ADO = Automatic Door Operator
DEML = Delayed Egress Magnetic Lock
DEPH = Delayed Egress Panic Exit Device
DPS = Door Position Switch (Door or Alarm Contact)
EL = Electric Lock or Electric Lever Exit Device
PB = Push-button Combination Lock (stand-alone)
RR = Remote Release Button
ELR = Electric Latch Retraction Exit Device
REX = Request-to-Exit Switch in Latching Device Inside Trim

INTERIOR SINGLE SECURITY DOORS

HW-SH-1

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

HW-SH-2

Each Door to Have:

NON RATED

1	Continuous Hinge	FM-3500 X 83 1/8" X SEC. TORX (MARKAR), OR EQUAL
1	Pull	212C X SEC. TORX (SOUTHERN FOLGER), OR EQUAL
1	Lock	1080A-1 X HM MOUNT X SEC. TORX (SOUTHERN FOLGER), OR EQUAL
1	Strike/Keeper	4CL X SEC. TORX (SOUTHERN FOLGER), OR EQUAL
1	Overhead Stop	C01541-ADJUSTABLE X SEC. TORX
1	Door Position Switch	2757 X SEC. TORX (GE SECURITY), OR EQUAL

HW-SH-3

Each [AC, EL, REX, DPS] Door to Have:

RATED/NON-RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Transfer Hinge	4-WIRE TYPE AS REQUIRED
1	Electrified Lock	F07 (E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.

CARD READER BY DIVISION 28.

HW-SH-3A

THIS SET NOT USED.

HW-SH-3B

Each [PB] Door to Have:

RATED

1	Continuous Hinge	A51031B
1	Push-button Combination Lock	N3 - A156.13 F07 G1 E06
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Kick Plate	J102
1	Mop Plate (@ Inswing Doors)	J102
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-SH-3C

Each [PB] Door to Have:

NON-RATED/RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Push-button Combination Lock	N3 - A156.13 F07 G1 E06
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-SH-3D

Each [AC, EL, REX, DPS] Door to Have:

RATED

1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS X 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL
1	Electrified Lock	F07 (E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-3E

Each [AC, EL, REX, DPS] Door to Have:

RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Transfer Hinge	4-WIRE TYPE AS REQUIRED
1	Electrified Occupancy Indicator Lock	F13-MODIFIED (E01-REX, E06) 24VDC X OCCUPANCY INDICATOR X KEY RETRACTS LATCHBOLT AND DEADBOLT X INTERNAL DEADBOLT MONITOR SWITCH
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 mm width (2-1/4 inches)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
2	Sets Self-Adhesive Seals	R0E154
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

INTERNAL DEADBOLT MONITOR SWITCH SHUNTS ACCESS CONTROL DEVICE WHEN DEADBOLT IS THROWN.
120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-3F

Each [AC, RR, EL, REX, DPS] Door to Have:

RATED

1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER x IN-HINGE ACCESS PANEL
1	Electrified Lock	F13-MOD x RIGID OUTSIDE LEVER X NO INSIDE TURN X KEY RETRACTS LATCHBOLT AND DEADBOLT(E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-3G

Each [AC, RR, EL, REX, DPS] Door to Have:

RATED

1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER x IN-HINGE ACCESS PANEL
1	Electrified Lock	F13-MOD x RIGID OUTSIDE LEVER X NO INSIDE TURN X KEY RETRACTS LATCHBOLT AND DEADBOLT(E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1	Auto Door Bottom	R0Y346 - HEAVY DUTY
1	Set Self-Adhesive Seals	R0E154
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-3H

Each [AC, EL, REX, DPS] Door to Have:

NON-RATED/RATED

1	Continuous Transfer Hinge	A51031B x 4-THRUWIRE TRANSFER x IN-HINGE ACCESS PANEL
1	Electrified Lock	F13-MOD x RIGID OUTSIDE LEVER X KEY RETRACTS LATCHBOLT AND DEADBOLT(E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)
1	Kick Plate	J102
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154
1	Door Viewer	L03221 - 190°
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-4

Each [AC, EL, REX, DPS] Integrated Door to Have:

RATED

1	Key Cylinder	TYPE AS REQUIRED
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BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-SH-4A

Each [ADO, AC, ELR, REX, DPS] Integrated Door to Have:

RATED

1	Key Cylinder	TYPE AS REQUIRED
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BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

<u>HW-SH-4B</u>		
<u>Each [ADO, AC, EL, REX, DPS] Door to Have:</u>		<u>RATED</u>
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 12-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL
1	Electrified Exit Device	TYPE 1 (E01-REX, E04) F13 LEVER
1	Key Cylinder	TYPE AS REQUIRED
1	Power Supply	TYPE REQUIRED BY PANIC MANUFACTURER X ADO BOARD
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1	Floor Stop	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154
POWER TRANSFER SHARED BY ELECTRIC PANIC AND RE-ACTIVATION SENSOR WIRING (RE- ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).		
AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.		

HW-SH-5

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

HW-SH-6

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

INTERIOR PAIRS OF SECURITY DOORS

HW-SH-7

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

HW-SH-8

THIS HARDWARE SET LEFT INTENTIONALLY BLANK AT THIS TIME.

HW-SH-9

Each [AC, EL, REX, DPS] Pair to Have:

RATED

	Hinges	QUANTITY & TYPE AS REQUIRED
1	Transfer Hinge	4-WIRE TYPE AS REQUIRED
1	Set Auto Flush Bolts	TYPE 25
1	Dust Proof Strike	L04021
1	Electrified Lock	F07 (E01-REX, E06) 24VDC
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1	Coordinator	TYPE 21A
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)
2	Kick Plates	J102 (@ STORAGE ROOMS ONLY)
2	Floor Stops	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154
2	Alarm Contacts	1078-G (G.E. SECURITY), OR EQUAL

120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
CARD READER BY DIVISION 28.

HW-SH-9A

Each [PB] Pair to Have:

RATED

2	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS
1	Set Auto Flush Bolts	TYPE 25
1	Dust Proof Strike	L04021
1	Push-button Combination Lock	N3 - A156.13 F07 G1 E06
1	Coordinator	TYPE 21A
1	Overlapping Astragal with Self-Adhesive Seal	R5Y634 x R0E154 x THRU-BOLTS
2	Closers	C02011/C02021 (PT4D, PT4F, PT4H)
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
2	Floor Stops	L02121 x 3 FASTENERS
1	Set Self-Adhesive Seals	R0E154

HW-SH-10

Each [AC, EL, REX, DPS] Pair Integrated Doors to Have:

RATED

1	Key Cylinder	TYPE AS REQUIRED
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BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-SH-10A

Each [AC, ADO, EL, REX, DPS] Pair Integrated Doors to Have:

RATED

1	Key Cylinder	TYPE AS REQUIRED
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BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES.
AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR
OPERATORS.

EXTERIOR SINGLE SECURITY DOORS

HW-SH-12

Each [AC, ELR, REX, DPS] Integrated Door to Have: NON-RATED

1 Key Cylinder TYPE AS REQUIRED
BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

MENTAL HEALTH AREAS

HW-MH1

Each Door to Have: NON-RATED/RATED

1 Continuous Hinge A51031B x INTEGRAL HINGE GUARD CHANNEL
X HOSPITAL TIP X ADJUSTA-SCREWS
1 Passage Latch F01 x LESS TRIM
1 Set Anti-Ligature Trim CH (Accurate Lock), or equal
1 Armor Plate J101 x 1.275 MM (0.050 INCH) THICKNESS
1 Edge Guard (@ Wood Doors) J208M / J211 (VERIFY), CUT: HARDWARE
1 Floor Stop L02121 x 3 FASTENERS
1 Set Seals R3C164
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.
NO CLOSER REQUIRED DUE TO EXEMPTION FOR PATIENT ROOM DOORS.

HW-MH1A

Each Door to Have: RATED

Hinges QUANTITY & TYPE AS REQUIRED
X HOSPITAL TIPS
1 Passage Latch F01 x LESS TRIM
1 Set Anti-Ligature Trim CH (Accurate Lock), or equal
1 Closer C02011/C02021 (PT4D, PT4F, PT4H)
x INSTALL OUTSIDE ROOM
1 Kick Plate J102
1 Mop Plate (@ Inswing Doors) J102
1 Floor Stop L02121 x 3 FASTENERS
1 Threshold J32300 x 57 MM WIDTH (2-1/4 INCHES)
1 Auto Door Bottom R0Y346 - HEAVY DUTY
1 Set Seals R3C164
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.

<u>Each Door to Have:</u>		<u>HW-MH1B</u>	<u>RATED/NON-RATED</u>
1	Continuous Hinge	A51031B x HOSPITAL TIP	
1	Passage Latch	F01 x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Kick Plate	J102	
1	Closer (@ rated doors)	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Closer (@ non-rated doors)	C02051/C02061 (PT4D, PT4H)	
1	Wall Stop	L52101 CONVEX	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
2	Sets Self-Adhesive Seals	R0E154	
INSTALL CLOSER OUTSIDE ROOM.			
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			

<u>Each Door to Have:</u>		<u>HW-MH2</u>	<u>NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED x HOSPITAL TIP	
1	Keyed Privacy Lock	F12-MOD x TURNPIECE BOTH SIDES x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
2	Anti-Ligature Thumbturns	ALT-ADA-D/P (VERIFY) (Accuate Lock), or equal	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
1	Set Seals	R3C164	
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-MH2A</u>	<u>RATED/NON-RATED</u>
	Hinges	QUANTITY & TYPE AS REQUIRED x HOSPITAL TIP	
1	Keyed Privacy Indicator Lock	F13 x OCCUPANCY INDICATOR x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Anti-Ligature Thumbturn	ALT-ADA-D/P (VERIFY) (Accuate Lock), or equal	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Mop Plate (@ Inswing Doors)	J102	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	
INSTALL CLOSER OUTSIDE ROOM			
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			
STONE THRESHOLD BY OTHER TRADES.			

<u>Each Door to Have:</u>		<u>HW-MH3</u>	<u>NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
1	Classroom Lock	F05 x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Mop Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
3	Silencers	L03011	
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			

<u>Each Door to Have:</u>		<u>HW-MH3A</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
1	Classroom Lock	F05 x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Set Self-Adhesive Seals	R0E154	
INSTALL CLOSER OUTSIDE ROOM.			
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			

<u>Each [AC, RR, EL, REX, DPS] Door to Have:</u>		<u>HW-MH4</u>	<u>RATED</u>
1	Continuous Transfer Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER x IN-HINGE ACCESS PANEL	
1	Electrified Lock	F07 (E01-REX, E06) 24VDC x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED	
1	Closer	C02011/C02021 (PT4D, PT4F, PT4H)	
1	Kick Plate	J102	
1	Stretcher Plate	J102	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Door Viewer	L03221 - 190° (VIEW INTO WAITING ROOM)	
1	Door Viewer	L03221 - 190° (VIEW INTO TREATMENT AREA)	
1	Set Self-Adhesive Seals	R0E154	
1	Alarm Contact	1078-G (G.E. SECURITY), OR EQUAL	
OMIT DOOR VIEWERS AT DOORS WITH VISION LITES.			
INSTALL DOOR CLOSER ON WAITING ROOM SIDE.			
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			
120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.			

CARD READER BY DIVISION 28.

<u>Each Door to Have:</u>		<u>HW-MH4A</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
1	Lock	F08 x LESS TRIM	
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
1	Set Seals	R3C164	
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			
NO CLOSER REQUIRED DUE TO EXEMPTION FOR PATIENT ROOM DOORS.			

<u>Each Door to Have:</u>		<u>HW-MH5</u>	<u>RATED/NON-RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
2	Anti-Ligature Pulls	DL34042 x BTB MOUNT (TRIMCO), OR EQUAL	
1	Deadlatch	F30 LESS TRIM BOTH SIDES	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Floor Stop	L02121 x 3 FASTENERS	
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)	
1	Auto Door Bottom	R0Y346 - HEAVY DUTY	
1	Set Seals	R3C164	
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			
NO CLOSER REQUIRED AT RATED DOORS DUE TO EXEMPTION FOR PATIENT ROOM DOORS.			

<u>Each Door to Have:</u>		<u>HW-MH5A</u>	<u>RATED</u>
1	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS	
2	Anti-Ligature Pulls	DL34042 x BTB MOUNT (TRIMCO), OR EQUAL	
1	Deadlatch	F30 LESS TRIM BOTH SIDES	
1	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE	
1	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS	
1	Floor Stop	L02121 x 3 FASTENERS	
3	Silencers	L03011	
STONE THRESHOLD BY OTHER TRADES.			
PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.			

HW-MH6

Each Pair to Have: RATED/NON-RATED

2	Continuous Hinges	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS
2	Anti-Ligature Pulls (act. 1f)	DL34042 x BTB MOUNT (TRIMCO), OR EQUAL
2	Manual Flush Bolts	L04251/L04261 (VERIFY)
1	Dust Proof Strike	L04021
1	Deadlatch	F30 LESS TRIM BOTH SIDES
1	Overlapping Astragal	R5Y634 x R0E154 x THRU-BOLTS
2	Armor Plates	J101 x 1.275 MM (0.050 INCH) THICKNESS
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
2	Floor Stops	L02121 x 3 FASTENERS
1	Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
2	Auto Door Bottom	R0Y336 - HEAVY DUTY
1	Set Seals	R3C164

PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.

HW-MH6A

Each Pair to Have: NON-RATED/RATED

2	Continuous Hinge	A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS
2	Manual Flush Bolts	L04251/L04261 (VERIFY)
1	Dust Proof Strike	L04021
1	Passage Latch	F01 x LESS TRIM
1	Set Anti-Ligature Trim	CH (Accurate Lock), or equal
1	Overlapping Astragal	R5Y634 x R0E154 x THRU-BOLTS
2	Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
2	Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
2	Floor Stop	L02121 x 3 FASTENERS
1	Set Seals	R3C164

PROVIDE SECURITY FASTENERS FOR ALL HARDWARE ITEMS.

NO CLOSER REQUIRED DUE TO EXEMPTION FOR PATIENT ROOM DOORS.

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SECTION 08 71 16

ELECTRO-MECHANICAL SWINGING DOOR OPERATORS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies equipment, controls and accessories required to provide automatic operation of doors. See attached sketches for additional information.

1.2 MANUFACTURER'S QUALIFICATIONS

- A. Automatic door operators, controls and other equipment shall be products of a manufacturer regularly engaged in manufacturing such equipment for a minimum of two years and shall be the manufacturer's best material, construction, design and finish.
- B. Manufacturer of products shall be represented by a factory authorized and trained distributor for products specified. Distributor shall maintain a parts inventory and trained service personnel at a location within a 150 mile radius of project to provide prompt service.
- C. One type of automatic door equipment shall be used throughout.

1.3 GUARANTEE

Automatic door operators shall be subject to a guaranty period of two years.

1.4 MAINTENANCE MANUALS

Furnish a complete set of maintenance and operation manuals, parts list, and schematics. Provide a one-hour instruction on automatic door operators to maintenance staff.

1.5 SUBMITTALS

Submit the following:

- A. Manufacturer's literature and data describing operators, power units, controls, door hardware and safety devices.
- B. Shop Drawings: Showing location of controls and safety devices in relationship to each automatically operated doors. Show operator installation.

1.6 DESIGN CRITERIA

- A. Automatic door equipment shall accommodate heavy traffic as well as the weight of the doors. Except as otherwise shown, provide operators which will move the doors from the fully closed to fully open position in three seconds maximum time interval, when speed adjustment is at maximum setting.
- B. Equipment: UL approved, applicable code. Provide key operated power disconnect wall switch for each door installation.

- C. Electrical wiring, connections and equipment: Provide all motor, starter, controls, associated devices, and interconnecting wiring required for the installation. Provide wiring so that only a single power supply is required.

1.7 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.
- B. American National Standards Institute, Inc.(ANSI):

A156.10-85.....Power operated pedestrian doors (BHMA 1601)
- C. National Fire Protection Association (NFPA):

80-90.....Fire doors and windows

101-91.....Code for safety to life from fire in
buildings and structures

PART 2 - PRODUCT

2.1 OPERATORS

- A. Description: The operator shall be an electro-mechanical system, sealed against dust, dirt, and corrosion in a cast aluminum case, and fully lubricated to minimize wear and friction of moving parts between temperature extremes of -20F and +140F. The entire operator shall be removable from the header as a unit.
- B. Power opening: The operator shall open the door 1 with a 1/8 HP, DC motor through reduction gears, ball screw actuator, forged steel rack and pinion, and linkage assembly. Door opening speed shall be 1.25-1.6 seconds from fully closed to back check (0-75 degrees) and 1.0-1.5 seconds from back check to fully open (75-90 degrees). The drive train shall have positive, constant engagement. A force no greater than 24 lbF at the lock stile shall stop the door from opening. The operator shall stop the door in the open position by electrically reducing the motor voltage and stalling against an adjustable 90 degree stop. All bearings shall be ball or roller type. No bushings shall be used.
- C. Visible overhead Mounted Operators: Electric type enclosed in housing concealing operator mechanism and mounting brackets. Furnish metal mounting supports, brackets and other accessories necessary for the installation of operators at the head of the door frames.

2.2 Electrical Control

General: All operators shall have checking mechanism providing cushioning action at last part of the door travel, in both opening and closing cycle. Operators shall recycle doors instantaneously to full open position from any point in closing cycle when control switch is reactivated. Operators shall, when automatic power is interrupted or shut-off, permit doors to easily open manually without damage to the operator system.

- A. Swing Operator Housing: Housing should be 5 1/2 inches wide by 6 inches high aluminum extrusions with enclosed end caps for application to four-inch and larger frame systems. All structural sections shall have a minimum wall thickness of 0.156-inch and be fabricated of 6063-T5 aluminum alloy. Access to the operator and electronic control box shall be provided by a full length removable cover, edge rabbeted to the header to ensure a flush fit.
- B. Connecting hardware for swing overhead concealed type power operator shall have drive arm attached to door with a pin linkage rotating in a self-lubricating bearing and adjustable slide block, traveling in an interconnecting track and top pivot assembly. Top track and pivot assembly shall be fabricated of steel. Door shall not pivot on shaft of operator.
- C. Electrical Control: Operator shall have a self-contained electrical control unit, including necessary transformers, relays, rectifiers, and other electronic components for proper operation and switching of power operator. Relays shall be plug-in type for individual replacement and all connecting harnesses shall have interlocking plugs. Control shall also include time delay for normal cycle. Swing door control shall include safe-swing circuits with optional switching which automatically limits power and slows door when approached from the doors swing area.
- D. Soft Start: All automatic doors shall contain an energy limiter which shall be modular electronic current control with a maximum of 2.5 peak amp current capacity for sliding doors, and 1.2 peak amp for swing doors for the purpose of controlling torque to reasonably limit unnecessary stress on entire package.
- E. Spring Closing: The operator shall close the door by spring energy. Closing speed shall be controlled by employing the motor as a dynamic brake. Door closing speed shall be 2.5-4.0 seconds from fully open to latch check (90-10 degrees) and not less than 1.5 seconds from latch check to fully closed (10-0 degrees). The closing spring shall be a Helical compression spring, pre-loaded for positive closing action at a low material stress level for long spring life.
- F. Furnish and install switch on bottom of operator housing for double swing doors. The switch shall have three settings: ON(enables automatic operator), OFF(disables automatic operator, and HOLD OPEN(holds doors at open position).

2.3 DOOR CONTROLS

- A. Opening and closing actions of doors shall be actuated by controls and safety devices specified, and conform to ANSI 156.10. Controls shall cause doors to open instantly when control device is actuated; hold doors in open positions; then, cause doors to close, unless safety device or reactivated control interrupts operation.
- B. Manual Controls:
 - 1. Push Plate Wall Switch: Recess type, cast aluminum or stainless push plate minimum four-inch by four-inch, with

1/2-inch high letters "To Operate Door--Push" engraved on face of plate.

2. The operator shall function as a manual door closer in the direction of swing with or without electrical power.
- C. Unless otherwise specified, all doors shall operate for two way traffic so that door operation can be controlled from either direction of approach.
- D. Motion Detector: The motion detector may be surface applied to provide a safety signal to door operator. The detector shall have a sensitivity zone as specified; shall constantly monitor such zone, when it is intruded upon by persons, carts or other similar objects. The detector unit shall maintain the signal until the sensitive zone is clear of any non-stationary persons or objects. The detection system must always indicate when a non-stationary persons or object moving with a minimum speed of two inch per second is in the control zone. Sensitivity zone shall be five feet deep and five feet across plus or minimum six inches on all dimensions. The maximum response time shall be no less than 25 milliseconds. Unit shall be designed to operate on 24 volts AC. The control must operate satisfactorily when subjected to outdoor conditions of rain, snow, ice, bright sunshine and total darkness. The control shall not be affected by cleaning material, solvents, dust, dirt, and outdoor conditions.
- E. Manufacturer shall furnish and install all specified equipment such as motion sensors, push plates, rails, and all other necessary accessories.

2.5 SAFETY DEVICES

- A. Area over which doors swing shall be a safety section and anyone standing in path of door's movement shall be protected by a safety device, except where push to open, push to close controls are shown.
- B. Time delay switches shall be adjustable between 3 to 60 seconds and shall control closing cycle of doors.
- C. Each swing door shall have installed on the pull side a presence sensor to detect any person standing in the door swing path and prevent the door from opening.
- D. Emergency Release: The operator shall have built-in emergency release with controlled spring return to the closed position without manual resetting. While the door is in the emergency release mode, a disconnect switch shall prevent powered operation. No housing or jamb mounted stops or cams shall be required for emergency function. Not more than 50 lbF at the lock site shall be required for emergency use, per ANSI A156.10.
- E. Entrapment Protection: The door forces and speeds generated during power opening, and manual opening in both directions of swing, and spring closing in both directions of swing shall conform to the requirements of ANSI A156.10.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Coordinate installation of equipment with other related work. Manual controls and power disconnect switches shall be recessed or semi-flush mounted in partitions. Secure operation components to adjacent construction with suitable fastenings. Conceal conduits, piping, and electric equipment, in finish work.
- B. Install power units in locations shown. Where units are to be mounted on walls, provide metal supports or shelves for the units. All equipment, including time delay switches, shall be accessible for adjustment.
- C. Operators shall be adjusted and must function properly for the type of traffic (pedestrians, carts, stretchers and wheelchairs) expected to pass through doors. Each door leaf of pairs of doors shall open and close in synchronization. On pairs of doors, operators shall allow either door to be opened manually without the other door opening.
- D. Install controls at positions shown and make them convenient for particular traffic expected to pass through openings. Maximum height of push plate wall switches from finished floors shall be 40 inches unless otherwise approved by the Project Engineer.

- - - E N D - - -

SECTION 08 75 00

INSTALLATION OF DOORS AND HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

This section covers the hanging of metal doors, the fitting, preparation for hardware, and the installation of builder's hardware, and lock cylinders.

1.2 RELATED WORK

- A. Steel doors and frames, including fitting and preparation for hardware: Section 08 11 15, STEEL DOORS AND FRAMES AND WINDOW FRAMES.
- B. Door hardware and its location (height): Section 08 71 00, HARDWARE.

PART 2 - PRODUCTS

2.1 FASTENERS

- A. Use the fasteners furnished with the hardware to be installed. Where fasteners are not furnished with the item to be installed, use fasteners of suitable size and type to harmonize with the item to be installed as to material and finish and to suit the material to which fastened.
- B. Provide machine screws and metal expansion shields to secure hardware door assembly. Fiber, plastic, and lead or plugs and adhesives are not permitted.
- C. All fastenings exposed to weather shall be of non-ferrous metal.

PART 3 - EXECUTION

3.1 HARDWARE HEIGHTS

- A. Locate hardware on doors at heights specified below:
- B. Hardware Heights from Finished Floor:
 - 1. Locksets and latch sets centerline of strike 40-5/16 inches.
 - 2. Deadlocks centerline of strike 40-5/16 inches.
 - 3. Centerline of deadlock strike to be 33 inches when used with push-pull latch.

NOTE: Other hardware shall be located at standard commercial heights. Push and pull plates shall be located to prevent conflict with other hardware.

- C. Modifications, necessitated by reason of construction, shall be submitted to Project Engineer for approval before being made.

3.2 INSTALLATION, GENERAL

- A. Hang doors and install hardware when concrete work, and other operations which increase humidity and dust in the building, have been completed.
- B. All materials in areas where wood doors are to be hung shall be sufficiently dry so as to not affect the dimensional stability of the door.
- C. Install hardware, except hinges, after field painting.

3.3 INSTALLING DOORS AND BUILDER'S HARDWARE

- A. Install hardware at the location (heights) specified in accordance with the manufacturer's printed instructions.
- B. Drill and tap screw holes in steel frames and doors for surface mounted hardware.
- C. Use of shims will only be permitted at hinges where required to provide uniform clearance and alignment of door. Shims shall be cut from stainless steel sheet, same size as hinge.
- D. Screws shall not be driven in place.
- E. Hardware items shall be carefully fitted and securely attached to doors and frames.

3.4 CLEANING AND ADJUSTING

- A. Doors, including hardware shall be cleaned and adjusted to operate as designed without binding or deformation of the members.
- B. Doors shall be centered in the opening or frame and shall have all contact surfaces fit tight and even without forcing or warping the components.
- C. Installation of doors and frames that do not conform to hardware heights requirements is not acceptable and shall be replaced.
- D. After installation, clean all surfaces, remove temporary labels, paint spots and other defacement. Clean prefinished and plated items and all items fabricated from stainless steel, aluminum and copper alloys, as recommended by the manufacturer.

3.5 PROTECTION

- A. Protect doors and hardware from damage caused by weather or during construction until completion of the project.

- - - E N D - - -

SECTION 08 80 00

GLAZING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies glass, plastic, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

1.2 RELATED WORK

- A. Factory glazed by manufacturer in following units:
 - 1. Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, and Section 08 14 00, WOOD DOORS.
 - 2. Section 08 41 13, Aluminum Framed Entrances and Storefronts.
 - 3. Color of spandrel glass, tinted Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 LABELS

- A. Temporary labels:
 - 1. Provide temporary label on each light of glass identifying manufacturer or brand and glass type, quality and nominal thickness.
 - 2. Label in accordance with NFRC (National Fenestration Rating Council) label requirements.
 - 3. Temporary labels shall remain intact until glass is approved by Project Engineer.
- B. Permanent labels:
 - 1. Locate in corner for each pane.
 - 2. Label in accordance with ANSI Z97.1 and SGCC (Safety Glass Certification Council) label requirements.
 - a. Tempered glass.
 - b. Laminated glass or have certificate for panes without permanent label.
 - c. Organic coated glass.

1.4 PERFORMANCE REQUIREMENTS

- A. Building Enclosure Vapor Retarder and Air Barrier:

1. Utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapor retarder seal.
 2. Maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
- B. Glass Thickness:
1. Select thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with applicable California Building Code (CBC).
 2. Test in accordance with ASTM E 1300.
 3. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

1.5 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Certificates:
1. Certificates stating that wire glass, meets requirements for safety glazing material as specified in ANSI Z97.1.
 2. Certificate on shading coefficient.
 3. Certificate on "R" value when value is specified.
 4. Certificate test reports confirming compliance's with specified bullet resistive rating.
- C. Warranty: Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.
- D. Manufacturer's Literature and Data:
1. Glass, each kind required.
 2. Insulating glass units.
 3. Elastic compound for metal sash glazing.
 4. Glazing cushion.
 5. Sealing compound.
- E. Samples:
1. Size: 150 mm by 150 mm (6 inches by 6 inches).

2. Tinted glass.
3. Reflective glass.

F. Preconstruction Adhesion and Compatibility Test Report: Submit glazing sealant manufacturer's test report indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.
- B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.
- C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators between each.

1.7 PROJECT CONDITIONS

Field Measurements: Field measure openings before ordering tempered glass products. Be responsible for proper fit of field measured products.

1.8 WARRANTY

- A. Warranty: Conform to terms of "Warranty of Construction", FAR clause 52.246-21, except extend warranty period for the following:
 1. Bullet resistive plastic material to remain visibly clear without discoloration for 10 years.
 2. Insulating glass units to remain sealed for 10 years.
 3. Laminated glass units to remain laminated for 5 years.

1.9 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):

Z97.1-04.....Safety Glazing Material Used in Building -
Safety Performance Specifications and Methods
of Test.

C. American Society for Testing and Materials (ASTM):

- C1363-05.....Thermal Performance of Building Assemblies, by
Means of A Hot Box Apparatus
- C542-05.....Lock-Strip Gaskets.
- C716-06.....Installing Lock-Strip Gaskets and Infill
Glazing Materials.
- C794-06.....Adhesion-in-Peel of Elastomeric Joint Sealants.
- C864-05.....Dense Elastomeric Compression Seal Gaskets,
Setting Blocks, and Spacers.
- C920-08.....Elastomeric Joint Sealants.
- C964-07.....Standard Guide for Lock-Strip Gasket Glazing.
- C1036-06.....Flat Glass.
- C1048-04.....Heat-Treated Flat Glass-Kind HS, Kind FT Coated
and Uncoated Glass.
- C1172-09.....Laminated Architectural Flat Glass.
- C1376-10.....Pyrolytic and Vacuum Deposition Coatings on
Flat Glass.
- D635-06.....Rate of Burning and/or Extent and Time of
Burning of Self-Supporting Plastic in a
Horizontal Position.
- D4802-02.....Poly (Methyl Methacrylate) Acrylic Plastic
Sheet.
- E84-09.....Surface Burning Characteristics of Building
Materials.
- E1300-09.....Determining Load Resistance of Glass in
Buildings.
- E2190-08.....Insulating Glass Unit

D. Commercial Item Description (CID):

- A-A-59502.....Plastic Sheet, Polycarbonate

E. Code of Federal Regulations (CFR):

- 16 CFR 1201 - Safety Standard for Architectural Glazing
Materials; 1977, with 1984 Revision.

F. National Fire Protection Association (NFPA):

- 80-08.....Fire Doors and Windows.

- G. National Fenestration Rating Council (NFRC)
- H. Safety Glazing Certification Council (SGCC) 2009:
Certified Products Directory (Issued Semi-Annually).
- I. Underwriters Laboratories, Inc. (UL):
752-06.....Bullet-Resisting Equipment.
- J. Unified Facilities Criteria (UFC):
4-010-01-2007.....DOD Minimum Antiterrorism Standards for
Buildings
- K. Glass Association of North America (GANA):
Glazing Manual (Latest Edition)
Sealant Manual (2008)
- L. American Society of Civil Engineers (ASCE):
ASCE 7-10.....Wind Load Provisions

PART 2 - PRODUCTS

2.1 GLASS

- A. Use thickness stated unless specified otherwise in assemblies.
- B. Clear Glass:
 - 1. ASTM C1036, Type I, Class 1, Quality.
 - 2. Thickness, as indicated.
 - 3. Coordinate color/tint/coating to comply with the selections made by the Architect.
- C. Tinted Heat reflective and low emissivity coated glass:
 - 1. ASTM C1036, Type I, Class 2, Quality q3.
 - 2. Color: As selected by the architect.
 - 3. Thickness, indicated on the drawings.

2.2 HEAT-TREATED AND FULLY TEMPERED GLASS

- A. Clear Heat Strengthened Glass:
 - 1. ASTM C1048, Kind HS, Condition A, Type I, Class 1, Quality q3.

2. Thickness, as indicated on the drawings.
- B. Clear Tempered Glass:
1. ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3.
 2. Thickness, as indicated on the drawings.
- C. Tinted Tempered Glass.
1. ASTM C1048, Kind FT, Condition A, Type I, Class 2, Quality q3.
 2. Color: As selected by the Architect.
 3. Thickness as indicated on the drawings.

2.3 COATED GLASS

- A. Spandrel Glass:
1. ASTM C1048, Kind HS, Condition B, Type I.
 2. Thickness, as indicated on the drawings.
- B. Reflective Tempered Glass:
1. ASTM C1048, Kind FT, Condition C, Type I, Class 1, Quality q3 with reflective metallic coating, having nominal values of 25 percent day light, 30 percent solar, and 7.9 percent ultraviolet transmittance within three percent plus or minus.
 2. Thickness, as indicated on the drawings.
- C. Low-E Tempered Glass:
1. ASTM C1048, Kind FT, Condition C, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15.
 2. Apply coating to second or third surface of insulating glass units as standard with the product manufacturer.
 3. Thickness, as indicated on the drawings.
- D. Ceramic Coated Spandrel Glass:
1. ASTM C1048, Kind FT, Condition B, Type I, Class 1, Quality q3 with ceramic coating applied over and fused into glass surface.
 2. Pattern as indicated in drawings, or as selected by the Architect.
 3. Apply coating to second surface.

4. Thickness, as indicated on the drawings.

2.4 LAMINATED GLASS

- A. Two or more lites of glass bonded with an interlayer material for use in building glazing
- B. Colored Interlayer:
 1. Use color interlayer ultraviolet light color stabilization.
 2. Option: Use colored interlayer with clear glass in lieu of tinted glass and clear interlayer.
 3. Option: Use white interlayer with clear glass in lieu of obscure glass and clear interlayer.
 4. The interlayer assembly shall have uniform color presenting same appearance as tinted glass assembly.
- C. Use 1.5 mm (0.060 inch) thick interlayer for:
 1. Horizontal or Sloped glazing.
 2. Acoustical glazing.
 3. Heat strengthened or fully tempered glass assemblies.
- D. Use min. 0.75 mm (0.030 inch) thick interlayer for vertical glazing where 1.5 mm (0.060 inch) interlayer is not otherwise shown or required.

2.5 INSULATING GLASS UNITS

- A. Provide factory fabricated, hermetically sealed glass unit consisting of two panes of glass separated by a dehydrated air space and comply with ASTM E2190.
- B. Assemble units using glass types indicated on the drawings.
- C. Sealed Edge Units (SEU):
 1. Insulating Glass Unit Makeup
 - a. Outboard Lite
 - 1) Glass type:
 - 2) Glass Tint:
 - 3) Nominal Thickness:
 - 4) Glass Strength: (Annealed, Heat-Strengthened, Tempered)
 - b. Spacer

- 1) Nominal Thickness:
- 2) Gas Fill: (Air or 90% Argon)
- c. Inboard Lite
 - 1) Glass Type:
 - 2) Glass Tint:
 - 3) Nominal Thickness:
 - 4) Glass Strength: (Annealed, Heat-Strengthened, Tempered)
3. Glass shall be annealed, heat strengthened or tempered as required by codes, as required to meet thermal stress and wind loads, or indicated on the drawings.
4. Glass heat-treated by horizontal (roller hearth) process with inherent roller wave distortion parallel to the bottom edge of the glass as installed when specified.
- D. Fused Edge Units, (FEU):
 1. Glass to glass sealed edges electrically fused.
 2. Air space not less than 4.8 mm (3/16 inch) wide up to 6 mm (1/4 inch) wide.
 3. R value not less than 1.5.
- E. FEU Clear Glass.
 1. Interior and exterior panes, ASTM C1036, Type I, Class 1, Quality q3, 3 mm (1/8 inch) thick.
 2. Thickness, 11 mm (7/16 inch) minimum.

2.6 FIRE RESISTANT GLASS WITHOUT WIRE MESH

- A. Fire resistant glass or glass assembly classified by UL in Building Materials Directory or other approved testing laboratory bearing permanent mark of classification.
- B. Firelite.
 1. UL listing R13377-1, 4.8 mm (3/16 inch) thick, unpolished.
 2. Distributed by Technical Glass Products; Kirkland, WA 98033.
- C. Pyrovue Commercial.
 1. UL listing R10178(N), 41 mm (1-5/8 inch) thick.

2. Represented by Advanced Glass Systems Corporation,
Trumbauersville, PA 18970-0051

2.7 GLAZING ACCESSORIES

- A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation. Ferrous metal accessories exposed in the finished work shall have a finish that will not corrode or stain while in service.
- B. Setting Blocks: ASTM C864:
 1. Channel shape; having 6 mm (1/4 inch) internal depth.
 2. Shore a hardness of 80 to 90 Durometer.
 3. Block lengths: 50 mm (two inches) except 100 to 150 mm (four to six inches) for insulating glass.
 4. Block width: Approximately 1.6 mm (1/16 inch) less than the full width of the rabbet.
 5. Block thickness: Minimum 4.8 mm (3/16 inch). Thickness sized for rabbet depth as required.
- C. Spacers: ASTM C864:
 1. Channel shape having a 6 mm (1/4 inch) internal depth.
 2. Flanges not less 2.4 mm (3/32 inch) thick and web 3 mm (1/8 inch) thick.
 3. Lengths: One to 25 to 76 mm (one to three inches).
 4. Shore a hardness of 40 to 50 Durometer.
- D. Sealing Tapes:
 1. Semi-solid polymeric based material exhibiting pressure-sensitive adhesion and withstanding exposure to sunlight, moisture, heat, cold, and aging.
 2. Shape, size and degree of softness and strength suitable for use in glazing application to prevent water infiltration.
- E. Spring Steel Spacer: Galvanized steel wire or strip designed to position glazing in channel or rabbeted sash with stops.
- F. Glazing Gaskets: ASTM C864:
 1. Firm dense wedge shape for locking in sash.
 2. Soft, closed cell with locking key for sash key.

3. Flanges may terminate above the glazing-beads or terminate flush with top of beads.
- G. Lock-Strip Glazing Gaskets: ASTM C542, shape, size, and mounting as indicated.
- H. Glazing Sealants: ASTM C920, silicone neutral cure:
 1. Type S.
 2. Class 25
 3. Grade NS.
 4. Shore A hardness of 25 to 30 Durometer.
- I. Structural Sealant: ASTM C920, silicone acetoxycure:
 1. Type S.
 2. Class 25.
 3. Grade NS.
 4. Shore a hardness of 25 to 30 Durometer.
- J. Neoprene, EPDM, or Vinyl Glazing Gasket: ASTM C864.
 1. Channel shape; flanges may terminate above the glazing channel or flush with the top of the channel.
 2. Designed for dry glazing.
- M. Color: As selected by the Architect.
 1. Color of glazing compounds, gaskets, and sealants used for aluminum color frames shall match color of the finished aluminum and be nonstaining.
 2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted shall be black, gray, or neutral color.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.
 2. Verify that glazing openings conform with details, dimensions and tolerances indicated on manufacturer's approved shop drawings.

- B. Advise Contractor of conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation: Do not proceed with installation until unsatisfactory conditions have been corrected.
- C. Verify that wash down of adjacent masonry is completed prior to erection of glass and glazing units to prevent damage to glass and glazing units by cleaning materials.

3.2 PREPARATION

- A. For sealant glazing, prepare glazing surfaces in accordance with GANA-02 Sealant Manual.
- B. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.
- C. Shop fabricate and cut glass with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.
- D. Verify that components used are compatible.
- E. Clean and dry glazing surfaces.
- F. Prime surfaces scheduled to receive sealants, as determined by preconstruction sealant-substrate testing.

3.3 INSTALLATION - GENERAL

- A. Install in accordance with GANA-01 Glazing Manual and GANA-02 Sealant Manual unless specified otherwise.
- B. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.
- C. Set glazing without bending, twisting, or forcing of units.
- D. Do not allow glass to rest on or contact any framing member.
- E. Glaze doors and operable sash, in a securely fixed or closed and locked position, until sealant, glazing compound, or putty has thoroughly set.
- F. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.
- G. Laminated Glass:
 - 1. Tape edges to seal interlayer and protect from glazing sealants.
 - 2. Do not use putty or glazing compounds.

H. Insulating Glass Units:

1. Glaze in compliance with glass manufacturer's written instructions.
2. When glazing gaskets are used, they shall be of sufficient size and depth to cover glass seal or metal channel frame completely.
3. Do not use putty or glazing compounds.
4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.
5. Install with tape or gunnable sealant in wood sash.

I. Fire Resistant Glass:

1. Wire glass: Glaze in accordance with NFPA 80.
2. Other fire resistant glass: Glaze in accordance with UL design requirements.

3.4 INSTALLATION - WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- A. Cut glazing tape to length and set against permanent stops, 5 mm (3/16 inch) below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at 1/4 points with edge block no more than 150 mm (6 inches) from corners.
- D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to achieve full contact at perimeter of pane or glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops, 6 mm (1/4 inch) below sight line. Place glazing tape on glazing pane or unit with tape flush with sight line.
- F. Fill gap between glazing and stop with elastomeric type sealant to depth equal to bite of frame on glazing, but not more than 9 mm (3/8 inch) below sight line.
- G. Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.5 REPLACEMENT AND CLEANING

- A. Clean new glass surfaces removing temporary labels, paint spots, and defacement after approval by Project Engineer.
- B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
- C. Leave glass, putty, and other setting material in clean, whole, and acceptable condition.

3.6 PROTECTION

Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

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SECTION 08 90 08

LOUVERS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies fixed wall louvers, and door louvers.

1.2 RELATED WORK

- A. Louvers in steel doors: Section 08 11 13, HOLLOW METAL DOORS AND FRAMES.
- B. Color of finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: Each type, showing material, finish, size of members, method of assembly, and installation and anchorage details.
- C. Manufacturer's Literature and Data: Each type of louver.

1.4 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.
- B. The Master Painters Institute (MPI):
Approved Product List - November 2007
- C. American Society for Testing and Materials (ASTM):
 - A167-99(R2004).....Stainless and Heat-Resisting Chromium -
Nickel Steel Plate, Sheet, and Strip
 - A1008/A1008M REV A-07...Steel, Sheet, Carbon, Cold Rolled,
Structural, and High Strength Low-Alloy
with Improved Formability
 - B209/B209M-07.....Aluminum and Aluminum Alloy, Sheet and
Plate
 - B221-06.....Aluminum and Aluminum Alloy Extruded Bars,
Rods, Wire, Shapes, and Tubes
 - B221M-07.....Aluminum and Aluminum Alloy Extruded Bars,
Rods, Wire Shapes, and Tubes
- D. National Association of Architectural Metal Manufacturers (NAAMM):
AMP 500-505 (1988).....Metal Finishes Manual

- E. National Fire Protection Association (NFPA):
90A-02.....Installation of Air Conditioning and
Ventilating Systems
- G. American Architectural Manufacturers Association (AAMA):
605-98.....High Performance Organic Coatings on
Architectural Extrusions and Panels
- H. Air Movement and Control Association, Inc. (AMCA):
500-L-99.....Testing Louvers

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum, Extruded: ASTM B221/B221M.
- B. Stainless Steel: ASTM A167, Type 302B.
- C. Carbon Steel: ASTM A1008/A1008M.
- D. Aluminum, Plate and Sheet: ASTM B209/B209M.
- E. Fasteners: Fasteners for securing louvers and wall vents to adjoining construction, except as otherwise specified or shown, shall be toggle or expansion bolts, of size and type as required for each specific type of installation and service condition.
 - 1. Where type, size, or spacing of fasteners is not shown or specified, submit shop drawings showing proposed fasteners, and method of installation.
 - 2. Fasteners for louvers, louver frames, and wire guards shall be of stainless steel or aluminum.
- F. Inorganic Zinc Primer: MPI No. 19.

2.2 EXTERIOR WALL LOUVERS

- A. General:
 - 1. Provide fixed type louvers of size and design shown.
 - 2. Heads, sills and jamb sections shall have formed caulking slots or be designed to retain caulking. Head sections shall have exterior drip lip, and sill sections an integral water stop.
 - 3. Furnish louvers with sill extension or separate sill as shown.
 - 4. Frame shall be mechanically fastened or welded construction with welds dressed smooth and flush.
- B. Performance Characteristics: Louvers shall bear AMCA certified rating seals for air performance and water penetration ratings.

C. Aluminum Louvers:

1. General: Frames, blades, and sills; 2 mm (0.081-inch) thick extruded aluminum. Blades shall be standard or drainable type and have reinforcing bosses.
2. Louvers, fixed: Make frame sizes 13 mm (1/2-inch) smaller than openings. Single louvers frames shall not exceed 1700 mm (66 inches) wide.

D. Stainless Steel Louvers: From stainless steel louvers using 1.6 mm (0.063-inch) thick sheet for frames, blades, and sills.

1. Louver shall have fixed 45 degree standard or drainable blades with water baffle. Make overall frame size 13 mm (1/2-inch) less than opening, unless otherwise shown.
2. Single louver sections shall not exceed 1700 mm (66 inches) in width.

2.3 CLOSURE ANGLES AND CLOSURE PLATES

- A. Fabricate from 2 mm (0.074-inch) thick stainless steel or aluminum.
- B. Provide continuous closure angles and closure plates on inside head, jambs and sill of exterior wall louvers.
- C. Secure angles and plates to louver frames with screws, and to masonry or concrete with fasteners as specified.

2.4 INTERIOR DOOR LOUVERS

- A. Fabricate louvers for interior doors 1.2 mm (0.0478-inch) thick steel or 1.6 mm (0.063-inch) thick extruded aluminum.
- B. Make louvers sight-proof type with stationary blades, except where light-proof louvers are required.
- C. Lightproof louvers shall have stationary blades and be designed to exclude passage of light but permit free ventilation.

2.5 FINISH

- A. In accordance with NAAMM Metal Finishes Manual: AMP 500-505, and as selected by the Architect.
- B. Aluminum Louvers
 1. Anodized finish
 - a. AA-C22A41 Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7 mils thick.
 - b. AA-C22A42 Chemically etched medium matte, with integrally colored anodic coating, Class I Architectural, 0.7 mils thick.

NOTE: AA-C22A44 Chemically etched medium matte, with electronically deposited metallic compound,

Class I Architectural, 0.7 mils thick may be provided as an option for AA-C22A42 color anodic coating. Dyes will not be accepted.

- 2. Organic Finish: AAMA 605 (Fluorocarbon coating).
- C. Stainless Steel: Mechanical finish No. 4 in accordance with NAAMM Metal Finishes Manual.
- D. Sheet Steel: Baked-on or oven dried shop prime coat.
 - 1. Paint interior surfaces of lightproof louvers with two additional finish shop coats of baked-on flat black enamel.
 - 2. Finish painting of exposed surfaces of shop primed louvers is specified in Section 09 91 00, PAINTING.
- E. Steel: Surfaces of steel work, for which no other finish is specified, shall be cleaned free from scale, rust, oil and grease, and then given a light colored prime paint after fabrication, except ferrous metals concealed in finished work. Paint all contact surfaces of assembled work (except welded contact surfaces) with an additional shop coat of similar paint.

2.6 PROTECTION

- A. Provide protection for aluminum against galvanic action wherever dissimilar materials are in contact, by painting the contact surfaces of the dissimilar material with a heavy coat of bituminous paint (complete coverage), or by separating the contact surfaces with a performed synthetic rubber tape having pressure sensitive adhesive coating on one side.
- B. Isolate the aluminum from plaster, concrete and masonry by coating aluminum with zinc-chromate primer.
- C. Protect finished surfaces from damage during fabrication, erection, and after completion of the work. Strippable plastic coating on colored anodized organic finish is not approved.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Furnish setting drawings and instructions for installation of anchors and for the positioning of items having anchors to be built into masonry construction. Provide temporary bracing for such items until masonry is set.
- C. Provide anchoring devices and fasteners as shown and as necessary for securing louvers to building construction as specified. Power actuated drive pins may be used, except for removal items and where members would be deformed or substrate damaged by their use.
- D. Generally, set wall louvers in masonry walls during progress of the work. If wall louvers are not delivered to job in time for

installation in prepared openings, make provision for later
installation. Set in cast-in-place concrete in prepared openings.

3.2 CLEANING AND ADJUSTING

- A. After installation, all exposed prefinished and plated items and all items fabricated from stainless steel and aluminum shall be cleaned as recommended by the manufacturer and protected from damage until completion of the project.
- B. All movable parts, including hardware, shall be cleaned and adjusted to operate as designed without binding or deformation of the members, so as to be centered in the opening of frame, and where applicable, to have all contact surfaces fit tight and even without forcing or warping the components

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