

VA Emergency Department Addition - B62
Project No. 589-700
Alloy Project No. 15206

**SECTION 07 72 00
ROOF ACCESSORIES**

PART 1 - GENERAL

1.1 DESCRIPTION:

A. This section specifies roof hatches.

1.2 RELATED WORK:

- A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Sealant material and installation: Section 07 92 00, JOINT SEALANTS.
- C. General insulation: Section 07 21 13, THERMAL INSULATION.

1.3 QUALITY ASSURANCE:

- A. Provide roof accessories that are the products of manufacturers regularly engaged in producing the kinds of products specified.
- B. For each accessory type provide the same product made by the same manufacturer.
- C. Assemble each accessory to the greatest extent possible before delivery to the site.

1.4 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
 - 1. Postconsumer and preconsumer recycled content as specified in PART 2 - PRODUCTS.
- C. Shop Drawings: Each item specified showing design, details of construction, installation and fastenings.
- D. Manufacturer's Literature and Data: Each item specified.
- E. Certificates: Stating that aluminum has been given specified thickness of anodizing.

1.5 APPLICABLE PUBLICATIONS:

- A. The publications listed below form a part of this specification to the extend referenced. The publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
 - RR-G-1602D.....Grating, Metal, Other Than Bar Type (Floor, Except for Naval Vessels)
- C. ASTM International (ASTM):
 - A653/A653M-10.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) By the Hot-Dip Process
 - B209-14.....Aluminum and Aluminum Alloy-Sheet and Plate
 - B209M-14.....Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
 - B221-14.....Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - B221M-13.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes (Metric)
 - C726-12.....Mineral Wool Roof Insulation Board

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- C1289-14a.....Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
 D1187/D1187M-97(R2011)..Asphalt-Base Emulsions for Use as Protective Coatings for Metal
- D. National Association of Architectural Metal Manufacturers (NAAMM):
 AMP 500 Series.....Metal Finishes Manual
- E. American Architectural Manufacturers Association (AAMA):
 2603-13.....Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
 2605-13.....High Performance Organic Coatings on Architectural Extrusions and Panels.
 611-14.....Anodized Architectural Aluminum
 621-02.....High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates
- F. American Society of Civil Engineers (ASCE):
 ASCE 7-10.....Minimum Design Loads for Buildings and Other Structures
- G. U.S. National Archives and Records Administration (NARA):
 29 CFR 1910.23.....Guarding Floor and Wall Openings and Holes

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Aluminum, Extruded: ASTM B221M (B221).
 B. Aluminum Sheet: ASTM B209M (B209).
 C. Galvanized Sheet Steel: ASTM A653/A653M; G-90 coating.
 D. Recycled Content of Metal Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 3 percent.
 E. Asphalt Coating: ASTM D1187/D1187M, Type I, quick setting.

2.2 ROOF HATCH:

- A. Performance Characteristics:
1. Cover to be reinforced to support a minimum live load of 195 kg per sq. m (40 lb. per sq. ft.) with a maximum deflection of 1/150th of the span or 97 kg per sq. m (20 lb. per sq. ft.) wind uplift.
 2. Operation of the Cover: Smooth and easy with controlled operation throughout the entire arc of opening and closing.
 3. Operation of the Cover: Not affected by temperature.
 4. Entire Hatch: Weathertight with fully welded corner joints on cover and curb.
- B. Shop fabricate from aluminum with mill finish.
- C. Curb and Cover:
1. Exterior facing: Minimum 2.3 mm (0.09 inch) thick sheet aluminum with mill finish.
 2. Interior facing: Minimum 1 mm (0.04 inch) thick sheet aluminum.
 3. Minimum of 50 mm (2 inch) thick polyisocyanurate insulation (ASTM C1289) with a U-value = 0.47 W/m² K (R-value = 12) between facings of cover and over exterior face of curb.
 4. Form exterior curb facing with an integral 76 mm (3 inch) wide roof flange and cap flashing minimum 2.3 mm (0.09 inch) thick sheet aluminum.
 5. Make curb 305 mm (12 inches) above finish roof surface.
 6. Form cover to lap curb and cap flashing.

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7. Size opening as shown on construction documents.

D. Hardware:

1. Provide spring snap latch with inside and outside operating handles and padlock hasp on inside. Provide two snap latches when hinge side is over 2100 mm (7 feet) long. Bolt hardware into heavy gauge channel reinforcement welded to the underside of the cover and concealed within the insulation space.
2. Provide heavy duty pintle hinges.
3. Provide automatic hold open and operating arm with enclosed torsion or compression spring lifting mechanism.
4. Latch Strike: Stamped component bolted or welded to the curb assembly.
5. Automatically lock in the open position at not less than 70 degrees.
6. Provide weatherstripping at cover closure.
7. Galvanize all hardware items.

E. Assembly:

1. Shop assemble roof scuttle.
2. Weld joints exposed to the weather and built into the roofing.
3. Finish weld smooth where exposed.

F. Safety Accessories:

1. Ladder Assist Post: Provide a telescoping tubular section that locks automatically when fully extended. Control upward and downward movement by a stainless steel spring balancing mechanism. Provide unit completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's instructions.
2. Safety Railing: Provide a fixed, attached to the roof hatch, railing assembly including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; complying with 29 CFR 1910.23 requirements.

2.3 FINISH:

- A. In accordance with NAAMM AMP 500 Series.
- B. Aluminum, Mill Finish: AA-MIX, as fabricated.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Install roof specialties where indicated on construction documents.
- B. Secure with fasteners in accordance with manufacture's printed installation instructions and approved shop drawings unless shown otherwise.
- C. Coordinate to install insulation where shown; see Section 07 21 13, THERMAL INSULATION.
- D. Comply with section 07 92 00, JOINT SEALANTS to install sealants where required by manufactures installation instructions require sealant.
- E. Coordinate with roofing work for installation of items in sequence to prevent water infiltration.

3.2 PROTECTION OF ALUMINUM:

- A. Provide protection for aluminum against galvanic action wherever dissimilar materials are in contact, by painting the contact surfaces of the dissimilar material with two (2) coats of asphalt coating (complete coverage), or by separating the contact surfaces with a preformed neoprene tape having pressure sensitive adhesive coating on side.

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B. Paint aluminum in contact with wood, concrete and masonry, or other absorptive materials, that may become repeatedly wet, with two coats of asphalt coating.

3.3 ADJUSTING:

A. Adjust roof hatch hardware to operate freely and so that cover will operate without binding, close tightly at perimeter, and latch securely.

3.4 PROTECTION:

A. Protect roof accessories from damage during installation and after completion of the work from subsequent construction.

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**SECTION 08 71 00
 DOOR HARDWARE**

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 RELATED WORK

- A. Caulking: Section 07 92 00 JOINT SEALANTS.
 B. Application of Hardware: Section 08 14 00, WOOD DOORS; Section 08 11 13, HOLLOW METAL DOORS AND FRAMES; Section 08 33 00, COILING DOORS AND GRILLES, Section 08 33 00.01, EXTERIOR COILING DOORS.
 C. Painting: Section 09 91 00, PAINTING.
 D. Electrical: Division 26, ELECTRICAL.
 E. Fire Detection: Section 28 31 00, FIRE DETECTION AND ALARM.

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

1.5 MAINTENANCE MANUALS

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

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1.6 SUBMITTALS

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

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

- C. Samples and Manufacturers' Literature:
 - 1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.
 - 2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.
- D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

1.7 DELIVERY AND MARKING

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

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5. Substrate surface protection.
6. Installation.
7. Adjusting.
8. Repair.
9. Field quality control.
10. Cleaning.

1.9 INSTRUCTIONS

- A. Hardware Sets: Hardware requirements for each door are indicated in the Hardware Schedule in this Section.
- B. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required. Equal products by other manufacturer's in compliance with requirements may be used.
- C. Keying: All cylinders shall be keyed into existing Grand Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7 pin type. Keying information shall be furnished at a later date by the COR.

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)
 - A156.5-14.....Cylinders and Input Devices for Locks.
 - A156.6-05.....Architectural Door Trim
 - A156.8-05.....Door Controls-Overhead Stops and Holders
 - A156.11-14.....Cabinet Locks
 - 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

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- 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
- A156.36-10.....Auxiliary Locks
- A250.8-03.....Standard Steel Doors and Frames
- D. National Fire Protection Association (NFPA):
 - 80-10.....Fire Doors and Other Opening Protectives
 - 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. Hinge Weight:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 8. Acceptable Manufacturers or equal:
 - a. Bommer Industries (BO).
 - b. Hager Companies (HA).
 - c. McKinney Products (MK).

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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 Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
 - 1. Acceptable Manufacturers or equal:
 - a. Bommer Industries (BO).
 - b. Hager Companies (HA).
 - c. McKinney Products (MK).
 - d. Pemko Manufacturing (PE).
- D. Continuous Geared Double-acting Hinges. ANSI/BHMA A156.26 Grade 1-600 Certified continuous geared hinges. Hinges are non-handed and allow the door to swing up to 100 degrees in either direction.
 - 1. Acceptable Manufacturers or equal:
 - a. Pemko Manufacturing (PE) - DHS Series.

2.3 OVERHEAD CLOSERS

- A. Conform to ANSI A156.4, Grade 1 and be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
- B. Standards:
 - 1. Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 - 2. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
 - 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 - 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.
- C. 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.

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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.
- D. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - DC8000 Series.
 - b. Norton Door Controls (NO) - 9500 Series.
 - c. Sargent Manufacturing (SA) - 281 Series.
- E. Door Closers, Overhead Concealed (Heavy Duty): ANSI/BHMA 156.4 certified Grade 1 heavy duty door closers with closers with complete spring power adjustment, sizes 1 thru 6. Closers to have fully concealed body in the frame head and track assembly in the door, rack and pinion type construction, either offset or center hung applications, with separate and independent valves for closing speed, latch speed, and backcheck adjustments. Overhead concealed closers require a minimum 4-inch frame head for mounting.
1. Acceptable Manufacturers:
 - a. LCN Closers (LC) - 2010 Series.
 - b. Norton Door Controls (NO) - 7900 Series.
 - c. Sargent Manufacturing (SA) - 268/278 Series.

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2.4 DOOR STOPS

- A. Conform to ANSI A156.16, Grade 1.
- 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).
- M. Acceptable Manufacturers or equal:
 1. Burns Manufacturing (BU).
 2. Hager Companies (HA).
 3. Hiawatha, Inc. (HI).
 4. Rockwood Manufacturing (RO).

2.5 OVERHEAD DOOR STOPS AND HOLDERS

- A. Conform to ANSI Standard A156.6.
- B. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door.
- C. Set overhead holders for 110 degree opening, unless limited by building construction or equipment.
- D. 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, surface or concealed types as indicated in Hardware Sets.
 1. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide

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non-handed design with mounting brackets as required for proper operation and function.

- E. Acceptable Manufacturers or equal:
1. Rixson Door Controls (RF).
 2. Rockwood Manufacturing (RO).
 3. Sargent Manufacturing (SA).

2.6 FLOOR DOOR HOLDERS

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

2.7 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Lock cylinders shall have not less than seven 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 to 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, Grade 1 (Heavy Duty). All locksets and latchsets, except on designated doors in Psychiatric (Mental Health) areas, shall have lever handles fabricated from cast stainless steel. Provide sectional (lever x rose) lever design matching Corbin Ruswin Series ML2000, LWM trim design, BHMA 626 finish. 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.
- C. Acceptable Manufacturers or equal:
1. Corbin Ruswin Hardware (RU) - ML2000 Series.
 2. Sargent Manufacturing (SA) - 8200 Series.
 3. Schlage (SC) - L9000 Series.

2.8 AUXILIARY LOCKS

- A. Behavioral Health, Mortise: ANSI/BHMA A156.13, Series 1000, Operational and Security Grade 1 mortise type manufactured to Office of Mental Health (OMH) requirements with behavioral health lever and rose trim. Locksets to be manufactured with a corrosion resistant, formed steel case. Levers and roses are manufactured from stainless steel material.

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Provide optional lead-lining (lock body), Torx® fasteners, and Antimicrobial coating as specified in Hardware Sets.

1. Acceptable Manufacturers:
 - a. Corbin Russwin (RU) - ML2000 BLSS Series.
 - b. Sargent Manufacturing (SA) - 8200 BHL Series.
 - c. Town Steel (TS) - MRX-L Series.

2.9 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
 4. Dustproof Strikes: BHMA A156.16.

2.10 CLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
 1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU).
 - b. No Substitution.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Match Facility Standard.
- D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
 1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.
- E. Keying System: Each type of lock and cylinders to be factory keyed.
 1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.

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2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Key locks to Owner's existing system.
- F. Construction Keying: Provide construction master keyed cylinders.
- G. Construction Keying: Provide temporary keyed construction cores.
- H. Key Registration List (Bitting List):
 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 2. Provide transcript list in writing or electronic file as directed by the Owner.

2.11 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: 1000 lbf (4448 N).
- B. Concealed Shear Locks: Shear locks to be self-aligning magnetic type suitable for mortised mounting.
 1. Locks to be "dual voltage" capable of accepting either 12 or 24VDC without field adjustment at the time of the installation.
 2. Electronics are to be fully sealed against tampering and allow exterior weatherproof applications.
 3. Locks can be mounted at the top or side of the door and will operate on either single or double acting doors.
 4. Power supply to be by the same manufacturer as the lock with combined products having a lifetime replacement warranty.
- C. Acceptable Manufacturer or equal:
 1. Securitron (SU) - SAM Series.

2.12 ELECTRIC STRIKES

- A. Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies.
- B. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft.-lbs. of dynamic strength. Strikes tested for a minimum 1 million operating cycles.
- C. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified.
- D. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.
- E. Acceptable Manufacturers or equal:
 - a. Folger Adam EDC (FO).
 - b. HES (HS).
 - c. Security Door Controls (SD).

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2.13 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.

2.14 KEY CABINET

- A. ANSI Standard A156.11. Provide key cabinet made of cold rolled, 1.2 mm (0.0478 inch) thick furniture steel electro-welded. Doors shall have "no sag" continuous brass-pin piano type hinge and be equipped with chrome plated locking door handles, hook cam and mechanical pushbutton door lock. Key Cabinet and Key Control System shall accommodate all keys for this project plus 25 percent. Provide minimum number of multiple cabinets where a single cabinet of largest size will not accommodate the required number of keys.
- B. Key tags shall consist of two sets: Permanent self-locking and loan key saphook type with tag colors as follows: Red fiber marker of the permanent self-locking type approximately 32 mm (1-1/4 inch) in diameter engraved with the legend "FILE KEY MUST NOT BE LOANED." Also furnish for each hook a white cloverleaf key marker with snap-hooks engraved with the legend "LOAN KEY."
- C. The manufacturer of the lock cylinders and locks shall attach a key tag to keys of each lock cylinder and shall mark thereon the respective item number and key change number. Provide each group of keys in a key gathering envelope (supplied by Key Cabinet Manufacturer) in which the lock manufacturer shall include the following information: Item number, key change number and door number. The contractor shall furnish the Key Cabinet Manufacturer the hardware and keying schedules and change keys.
- D. The Key Cabinet Manufacturer shall set up a three-way cross index system, including master keys, listing the keys alphabetically, the hooks numerically and the key changes numerically on different colored index cards. Index cards shall be typewritten and inserted in a durable binder. Attach the keys to the two sets of numbered tags supplied with the cabinet. (The permanent tag and the loan key tag). Instruct the owner in proper use of the system. Install cabinet as directed by the COR.

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

- A. Conform to ANSI Standard A156.6, stainless steel 300 grade.
- 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

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- 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. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
 7. Acceptable Manufacturers or equal:
 - a. Burns Manufacturing (BU).
 - b. Hager Companies (HA).
 - c. Hiawatha, Inc. (HI).
 - d. Rockwood Manufacturing (RO).

2.16 CONVENTIONAL 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.

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- E. At non-rated openings with panic hardware, provide panic hardware with key cylinder dogging feature.
- F. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
 - 1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Submit proof of compliance. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 - 3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 - 4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 - 5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 - 6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
 - 7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
 - 8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
 - 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 - 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 - 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- G. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
 - 1. Acceptable Manufacturers or equal:
 - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - b. Sargent Manufacturing (SA) - 80 Series.
 - c. Von Duprin (VD) - 35A/98 XP Series.

2.17 FLUSH BOLTS (LEVER EXTENSION)

- A. Conform to ANSI A156.3 and A156.16, Grade 1. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes

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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).
- F. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor.
- G. Furnish dust proof strikes for bottom bolts.
- H. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
- I. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
- J. Acceptable Manufacturers or equal:
 - 1. Burns Manufacturing (BU).
 - 2. Door Controls International (DC).
 - 3. Rockwood Manufacturing (RO).

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 WITH PLATES

- A. Conform to ANSI A156.6. Pull Type J401, 152 mm CTC (6 inches CTC) length by 19 mm (3/4 inches) diameter minimum with plate Type J302, 90 mm by 381 mm (3-1/2 inches by 15 inches), unless otherwise specified. Provide pull with projection of 57.2 mm (2 1/4 inches) minimum and a clearance of 38.1 mm (1 1/2 inches) minimum. Cut plates of door pull plate for cylinders, or turn pieces where required.

2.20 PUSH PLATES

- A. Conform to ANSI A156.6. Metal, Type J302, 203 mm (8 inches) wide by 406.4 mm (16 inches) high. Provide metal Type J302 plates 102 mm (4 inches) wide by 406.4 mm (16 inches) high where push plates are specified for doors with stiles less than 203 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.

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- B. Door Push Plates and Pulls: ANS/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 5. Acceptable Manufacturers or equal:
 - a. Burns Manufacturing (BU).
 - b. Hiawatha, Inc. (HI).
 - c. Rockwood Manufacturing (RO).

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) beyond face of frame.

2.24 WEATHERSTRIPS (FOR EXTERIOR DOORS)

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

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- B. Conform to ANSI A156.22. Air leakage shall not to exceed 0.50 CFM per foot of crack length (0.000774m³/s/m).
- C. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- D. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.
- E. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- F. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- G. Acceptable Manufacturers or equal:
 - 1. National Guard Products (NG).
 - 2. Pemko Manufacturing (PE).
 - 3. Reese Enterprises, Inc. (RE).

2.25 ELECTRONIC ACCESSORIES

- A. Key Switches: Key switches furnished standard with stainless steel single gang face plate with a 12/24VDC bi-color LED indicator. Integral backing bracket permits integration with any 1 1/4" or 1 1/2" mortise type cylinder. Key switches available as momentary or maintained action and in narrow face plate options.
 - 1. Acceptable Manufacturers or equal:
 - a. Security Door Controls (SD) - 800 Series.
 - b. Securitron (SU) - MK Series.
- B. Power Supplies: Provide Nationally Recognized Testing Laboratory Listed 12VDC or 24VDC (field selectable) filtered and regulated power supplies. Include battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
 - 1. Acceptable Manufacturers or equal:
 - a. Sargent Manufacturing (SA) - 3500 Series.
 - b. Security Door Controls (SD) - 630 Series.
 - c. Securitron (SU) - BPS Series.

2.26 AUTOMATIC DOOR OPERATORS

- A. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.
 - 1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

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- B. Electrohydraulic Door Operators: Self-contained low-pressure units with rack and pinion design contained within a cast aluminum housing. Door closing speed controlled by independent hydraulic adjustment valves in the sweep and latch range of the closing cycle. Operator is to provide conventional door closer opening and closing forces unless the power operator motor is activated. Unit is to include an adjustable hydraulic backcheck valve to cushion the door speed if opened violently. Non-handed units for both push and pull side applications.
- C. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.
- D. Standard: Certified ANSI/BHMA A156.19.
 - 1. Performance Requirements:
 - a. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
 - b. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.
- E. Configuration: Surface mounted. Door operators to control single swinging and pair of swinging doors.
- F. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.
 - 1. On-off switch to control power to be key switch operated.
- G. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.
- H. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.
- I. Activation Devices: Provide activation devices in accordance with ANSI/BHMA A156.19 standard, for condition of exposure indicated and for long term, maintenance free operation under normal traffic load operation. Coordinate activation control with electrified hardware and access control interfaces. Activation switches are standard SPST, with optional DPDT availability.
- J. Signage: As required by cited ANSI/BHMA A156.19 standard for the type of operator.
 - 1. Acceptable Manufacturers or equal:
 - a. Besam Automated Entrance Systems (BM) - SW100 Series.
 - b. Horton Automatics (HO) - 4000 Series.
 - c. Norton Door Controls (NO) - 6000 Series.

2.27 MISCELLANEOUS HARDWARE

- A. Cylinders for Various Partitions and Doors: Key cylinders same as entrance doors of area in which partitions and door occur. Provide cylinders to operate locking devices where specified for following partitions and doors:
 - 1. Coiling and Counter doors.

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- B. 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.

2.28 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.
- 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.
- G. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.29 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 new buildings locate hardware on doors at heights specified below, with all hand-operated hardware centered within 864 mm (34 inches) to 1200 mm (48 inches), unless otherwise noted:
- B. Hardware Heights from Finished Floor:

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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. 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

- E. 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.

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F. After locks have been installed; show in presence of COR 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 COR 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 COR that upon completion, installer has visited the Project and has accomplished the following:

1. Re-adjust hardware.
2. Evaluate maintenance procedures and recommend changes or additions, and instruct VA personnel.
3. Identify items that have deteriorated or failed.
4. Submit written report identifying problems.

3.4 DEMONSTRATION

A. Demonstrate efficacy of mechanical hardware and electrical, and electronic hardware systems, including adjustment and maintenance procedures, to satisfaction of COR and VA Locksmith.

3.5 HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. RU - Corbin Russwin
5. SA - Sargent
6. HS - HES
7. RF - Rixson
8. NO - Norton
9. SU - Securitron

Hardware Schedule

Set: 1.0

Doors: 001A

Description: Exterior

Notes: All hardware furnished by Aluminum Door Supplier.

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Set: 2.0

Doors: 013
 Description: Exterior

Notes: All hardware furnished by Aluminum Door Supplier.

Card reader furnished by division 28 supplier.

Set: 3.0

Doors: 014A
 Description: Exterior

1 Continuous Hinge	CFMHD1 PT x Door Height		PE
1 Electrified Mortise Lock	ML20906-SAF LWM M92 CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A11 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Door Stop	462	US2C	RO
1 Threshold	279x292AFGPK x Opening Width		PE
1 Gasketing	S773D (Head & Jambs)		PE
1 Rain Guard	346C x Frame width		PE
1 Sweep	345ANB x Door Width		PE
1 ElectroLynx Harness	QC-C1500P		MK
1 ElectroLynx Harness	QC-C Length Required		MK
1 Electric Power Transfer	EL-CEPT		SU
1 Position Switch	DPS-M-BK		SU
1 Power Supply	EPS-05		SU

Notes: Card reader furnished by division 28 supplier.

Operation: Door is normally closed and locked. When a vail credential is presented to the wall mounted card reader the outside trim will release and you can turn the outside lever and enter the space. When the door comes back closed the outside lever will relock. If you want to exit out you can turn the inside lever and exit out of the space. The inside lever will be equipped with a REX or request to exit switch.

Set: 4.0

Doors: 015
 Description: Exterior

2 Continuous Hinge	CFMHD1 x Door Height		PE
1 Flush Bolt	555-12	US26D	RO
1 Dust Proof Strike	570	US26D	RO
1 Flush Bolt	555-36	US26D	RO
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
2 Closer (surface)	DC8210 A11 M54	689	RU
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Door Stop	462	US2C	RO
1 Threshold	279x292AFGPK x Opening Width		PE

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1 Gasketing	S773D (Head & Jambs)		PE
1 Rain Guard	346C x Frame width		PE
2 Sweep	345ANB x Door Width		PE
2 Position Switch	DPS-M-BK		SU

Notes: Metal overlapping astragal furnished by Hollow Metal Door Supplier.

Set: 5.0

Doors: 049A

Description: Exterior

1 Continuous Hinge	CFMHD1 x Door Height		PE
1 Mortise Lock (institution)	ML2032 LWM CT7R	626	RU
2 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A11 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Threshold	279x292AFGPK x Opening Width		PE
1 Gasketing	S773D (Head & Jambs)		PE
1 Rain Guard	346C x Frame width		PE
1 Sweep	345ANB x Door Width		PE
1 Position Switch	DPS-M-BK		SU

Set: 6.0

Doors: 102

Description: Roof

1 Continuous Hinge	CFMHD1 x Door Height		PE
1 Mortise Lock (institution)	ML2032 LWM CT7R	626	RU
2 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A11 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Threshold	279x292AFGPK x Opening Width		PE
1 Gasketing	S773D (Head & Jambs)		PE
1 Rain Guard	346C x Frame width		PE
1 Sweep	345ANB x Door Width		PE
1 Position Switch	DPS-M-BK		SU

Set: 7.0

Doors: 001B

Description: Vestibule

Notes: All hardware furnished by Aluminum Door Supplier.

Set: 8.0

Doors: 003, 043

Description: Consult, HSKP

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU

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1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.

Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 9.0

Doors: 005A, 006A

Description: Triage

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Electromagnetic Holder	998	689	RF
3 Silencer	608		RO
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.

Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 10.0

Doors: 005B, 006B, 014B, 014C, 016, 018A

Description: Triage, Decontam, Exam

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (passage)	ML2010 LWM	626	RU
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

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Set: 11.0

Doors: 008A
 Description: Vestibule

Notes: All hardware furnished by Aluminum Door Supplier.

Set: 12.0

Doors: 008B, 037A
 Description: Circulation, Corridor (Rated)

6 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
2 Exit Device	12 NB8710	US32D	SA
2 Closer (surface)	DC8210 A3 M54	689	RU
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Electromagnetic Holder	998	689	RF
1 Gasketing	S88D (Head & Jambs)		PE
2 Astragal	18041CNB x Door Height		PE

Set: 13.0

Doors: 008C
 Description: Security

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.
 Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 14.0

Doors: 009
 Description: Office

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (office)	ML2053 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Wall Stop	406	US32D	RO

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3 Silencer 608 RO

Set: 15.0

Doors: 012, 036

Description: Storage, Clean

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (passage)	ML2010 LWM	626	RU
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 16.0

Doors: 017A, 017B

Description: Toilet

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (privacy)	ML2030 LWM	626	RU
1 Surface Overhead Stop	9 series	652	RF
3 Silencer	608		RO

Set: 17.0

Doors: 018B

Description: Exam (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (passage)	ML2010 LWM	626	RU
1 Closer (surface)	DC8210 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

Set: 18.0

Doors: 021

Description: Procedure

1 Double Acting Hinge	DSHP01C-Torx x Door Height		PE
1 Mortise Lock (passage)	ML2010 LWM	626	RU
1 Concealed Overhead Stop	2 Series	652	RF
1 Emergency Stop	ERS84CxHT		PE

Notes: 2 Series overhead stop will take a special template for this application.

Set: 19.0

Doors: 023

Description: Toilet

1 Double Acting Hinge	DSHP01C-Torx x Door Height		PE
1 Mortise Lock (privacy)	ML2030 LWM	626	RU
1 Concealed Overhead Stop	2 Series	652	RF

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1 Emergency Stop ERS84CxHT PE

Notes: 2 Series overhead stop will take a special template for this application.

Set: 20.0

Doors: 024
 Description: Mental Toilet

1 Double Acting Hinge	DSHP01C-Torx x Door Height		PE
1 Mortise Lock	ML2030 BLSS M04	630	RU
1 Concealed Overhead Stop	2 Series	652	RF
1 Emergency Stop	ERS84CxHT		PE

Notes: 2 Series overhead stop will take a special template for this application.

Set: 21.0

Doors: 025A
 Description: Mental Exam

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock	ML2010 BLSS M04	630	RU
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 22.0

Doors: 025B
 Description: Exam

1 Interchangeable Core	8000-7-	626	RU
1 Cylinder	3080-178 or 1080-114 CT7R as required	626	RU

Notes: Balance of hardware furnished by Coiling Door Supplier.

Set: 23.0 – Not Used

Set: 24.0

Doors: 037B, 038
 Description: Corridor (Rated)

2 Continuous Hinge	CFMHD1 PT x Door Height		PE
1 Exit Device	LC 12 55 56 NB8710 ETL	US32D	SA
1 Exit Device	LC 12 55 56 NB8706 ETL	US32D	SA
1 Interchangeable Core	8000-7-	626	RU
1 Cylinder	1080-114- CT7R	626	RU
1 Door Operator	6020	689	NO
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jamb)		PE
2 Astragal	18041CNB x Door Height		PE

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2 ElectroLynx Harness	QC-C1500P	MK
2 ElectroLynx Harness	QC-C Length Required	MK
2 Electric Power Transfer	EL-CEPT	SU
2 Position Switch	DPS-M-BK	SU
1 Operator Wall Switch	505	NO
1 Operator Wave Switch	700	NO
1 Power Supply	BPS-24-2	SU

Notes: Card reader furnished by division 28 supplier.

Operation: This pair of door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the latches on the exit device will retract and the corridor side door operator switch will become live and can be used to open the door. When the door comes back closed the exit devices will relock and the corridor side switch for the door operator will go dead. You can always exit out of these doors by pushing the push pad on the exit device and exiting out of the space. The inside push pad will be equipped with a REX or request to exit switch built in to it.

Set: 25.0

Doors: 029A, 029B, 030A, 035
 Description: Exam, Soiled (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (passage)	ML2010 LWM	626	RU
1 Closer (surface)	DC8210 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

Set: 26.0

Doors: 030B
 Description: Exam (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (office)	ML2053 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

Set: 27.0

Doors: 031, 032, 045
 Description: Logistics, Meds, Staff

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
3 Hinge	T4A3786 5" x 4-1/2" (Dr. 031)	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS

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1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.
 Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 28.0

Doors: 040A

Description: Corridor (Rated)

2 Continuous Hinge	CFMHD1 PT x Door Height		PE
2 Exit Device	LC 12 56 NB8713 ETL	US32D	SA
2 Delayed Egress Magnetic Lock	IMXDA		
4 Interchangeable Core	8000-7-	626	RU
4 Cylinder	1080-114- CT7R	626	RU
2 Door Operator	6020	689	NO
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE
2 Astragal	18041CNB x Door Height		PE
2 ElectroLynx Harness	QC-C1500P		MK
2 ElectroLynx Harness	QC-C Length Required		MK
2 Electric Power Transfer	EL-CEPT		SU
2 Position Switch	DPS-M-BK		SU
1 Operator Wave Switch	700		NO
1 Power Supply	BPS-24-2		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply for delayed egress lock furnished by access control supplier. Power supply for exits will be furnished by hardware supplier.

Operation: Door is normally closed and the Delayed Egress magnetic locks are on. When a valid credential is presented to the wall mounted card reader on the push side of the doors the delayed egress magnetic locks will release and the rods on the exit devices will retract and the operator will open the doors. When the doors come back closed the doors will relock and the delayed egress magnetic locks will rearm. On the pull side of the doors you can always enter by waving your hand in front of the wave switch and the delayed egress magnetic locks will release and the exit device rods will retract and the door operator will open the doors. When the doors come back closed the doors will relock. There will be a XMS motion sensor located on the pull side of the doors to release the delayed egress magnetic locks. These magnetic locks will be wired into the fire alarm system so in case of fire the delayed egress magnetic locks will release and you can freely exit out of the space.

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Set: 29.0

Doors: 040B

Description: Corridor (Rated)

2 Continuous Hinge	CFMHD1 PT x Door Height		PE
1 Exit Device	LC 12 55 56 NB8710 ETL	US32D	SA
1 Exit Device	LC 12 55 56 NB8706 ETL	US32D	SA
1 Interchangeable Core	8000-7-	626	RU
1 Cylinder	1080-114- CT7R	626	RU
2 Door Operator	6020	689	NO
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE
2 Astragal	18041CNB x Door Height		PE
2 ElectroLynx Harness	QC-C1500P		MK
2 ElectroLynx Harness	QC-C Length Required		MK
2 Electric Power Transfer	EL-CEPT		SU
2 Position Switch	DPS-W-BK		SU
1 Operator Wall Switch	505		NO
1 Operator Wave Switch	700		NO
1 Power Supply	BPS-24-2		SU

Notes: Card reader furnished by division 28 supplier.

Operation: This pair of door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the latches on the exit device will retract and the corridor side door operator switch will become live and can be used to open the door. When the door comes back closed the exit devices will relock and the corridor side switch for the door operator will go dead. You can always exit out of these doors by pushing the push pad on the exit device and exiting out of the space. The inside push pad will be equipped with a REX or request to exit switch built in to it.

Set: 30.0

Doors: 041

Description: I.T. (Rated)

3 Hinge	T4A3786 NRP 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210 A3 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.

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Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 31.0

Doors: 042

Description: Mechanical (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Electric Strike	1006	630	HS
1 Electric Strike Faceplate	KM	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Closer (surface)	DC8210 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE
1 Position Switch	DPS-W-BK		SU
1 Motion Sensor	XMS		SU

Notes: Card reader furnished by Owner. Power supply furnished by access control supplier.

Operation: Door is normally closed and locked. When a valid credential is presented to the wall mounted card reader the electric strike will release and you can pull or push the door open. When the door comes back closed the electric strike will relock. The XMS motion sensor will be used as the REX or request to exit switch for this opening.

Set: 32.0

Doors: 044

Description: Toilet

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (privacy)	ML2030 LWM	626	RU
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 33.0

Doors: 046

Description: Office

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (office)	ML2053 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

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Set: 34.0

Doors: 047, 048

Description: Women, Men

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Push Plate	70C	US32D	RO
1 Pull Plate	BF 107x70C	US32D	RO
1 Closer (surface)	DC8210	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 35.0

Doors: 100A

Description: Stairs

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A3 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 36.0

Doors: 100B

Description: Corridor (Rated)

2 Continuous Hinge	CFMHD1 x Door Height		PE
2 Exit Device	LC 12 NB8713 ETL	US32D	SA
2 Interchangeable Core	8000-7-	626	RU
2 Cylinder	1080-114- CT7R	626	RU
2 Closer (surface)	DC8210 A3 M54	689	RU
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
2 Electromagnetic Holder	998	689	RF
1 Gasketing	S88D (Head & Jambs)		PE
2 Astragal	18041CNB x Door Height		PE

Set: 37.0

Doors: 101

Description: Elev. Equipment (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A4 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE
1 Position Switch	DPS-W-BK		SU

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Set: 38.0

Doors: 049B
 Description: Exterior

Notes: All hardware furnished by Overhead Door Supplier.

Set: 39.0

Doors: 050
 Description: Fire Sprinkler (Rated)

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A4 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

Set: 40.0

Doors: 051
 Description: EM Power (Rated)

3 Hinge	T4A3786 5" x 4-1/2"	US26D	MK
1 Mortise Lock (storeroom)	ML2057 LWM CT7R	626	RU
1 Interchangeable Core	8000-7-	626	RU
1 Closer (surface)	DC8210 A4 M54	689	RU
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO
1 Gasketing	S88D (Head & Jambs)		PE

- - - E N D - - -