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.

C. Painting: Section 09 91 00, PAINTING.

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. Cylindrical locksets.
2. Hinges for hollow metal and wood doors.
3. Surface applied overhead door closers.

1.4 WARRANTY

A. The Warranty period shall be two years in lieu of one year for all items except as noted below:

1. Locks, latchsets: 5 years.

2. Door closers: 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 Project Engineer for

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

1.8 PREINSTALLATION MEETING

A. Convene a pre-installation 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. Keying: All cylinders shall be keyed into existing VA Great Grand Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 6 or 7 pin type. Keying information shall be furnished at a later date by the Project Engineer.

C. Keying: The key system shall be small format (Best size and profile) removable core type as previously described. The key blanks shall be protected by a utility patent with a minimum seven years remaining on the patent from the start of construction, and protected by contract-controlled

distribution. The manufacturer shall furnish code pattern listings in both paper and electronic formats so keys may be reproduced by code.; provide electronic format in file type required by project's key control software. The manufacturer shall design the new key system with the capacity to rekey the existing system and also provide for 25 percent expansion capability beyond this requirement. Submit a keying chart for approval showing proposed keying layout and listing expansion capacity.

1. Keying information will be furnished to the Contractor by the Project Engineer.
2. Supply information regarding key control of cylinder locks to manufacturers of equipment having cylinder type locks. Notify Project Engineer immediately when and to whom keys or keying information is supplied. Return all such keys to the Project 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):
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
A156.13-05.....Mortise Locks and Latches Series 1000
A156.16-08.....Auxiliary Hardware
A156.18-06.....Materials and Finishes
A156.21-09.....Thresholds
A156.22-05.....Door Gasketing and Edge Seal Systems

A156.28-07 .....Master Keying Systems

A156.30-03 .....High Security Cylinders

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.

2.2 DOOR CLOSING DEVICES

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

2.3 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.

2.4 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).

2.5 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 or seven pins. Cylinders for all locksets shall be removable core type. Cylinders shall be furnished with construction removable cores and construction master keys. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 19 mm (3/4 inch) throw, unless shorter throw allowed by the door manufacturer’s fire label. Provide temporary keying device or construction core of allow opening and closing during construction and prior to the installation of final cores.

B. In addition to above requirements, locks and latches shall comply with following requirements:

1. Cylindrical Lock and Latch Sets: levers shall meet ADA (Americans with Disabilities Act) requirements. Cylindrical locksets shall be series 4000 Grade I. All locks and latchsets shall be furnished with 122.55 mm (4-7/8-inch) curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8-inch) lip-to-center dimension. Provide lever design 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.

2.6 KEYS

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

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

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

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

A. Conform to ANSI Standard A156.6.

B. Provide protective plates as specified below:

1. Kick plates, mop plates and armor plates of metal, Type J100 series.
2. Provide kick plates and mop plates where specified. Kick plates shall be 254 mm (10 inches) or 305 mm (12 inches) high. Mop plates shall be 152 mm (6 inches) high. Both kick and mop plates shall be minimum 1.27 mm (0.050 inches) thick. Provide kick and mop plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors which shall have plates 25 mm (1 inch) less than width of each door. Extend all other kick and mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick and mop plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.
3. Kick plates and/or mop plates are not required on following door sides:
   a. Armor plate side of doors;
   b. Exterior side of exterior doors;
   c. Closet side of closet doors;
   d. Both sides of aluminum entrance doors.
4. 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.

2.8 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.

2.9 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.

2.10 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 fame face.

2.11 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).

2.12 MISCELLANEOUS HARDWARE

A. 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.

2.13 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.

2.14 BASE METALS

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

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

PART 3 - EXECUTION

3.1 HARDWARE HEIGHTS

A. For existing buildings locate hardware on doors at heights to match existing hardware. The Contractor shall visit the site, verify location of existing hardware and submit locations to VA Project Engineer 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 Project 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 Project 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 Project 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.

FINISH HARDWARE

HW SET: 01

5	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	FIRE EXIT HARDWARE	E9875L-F 996L FSE 24VDC	626	VON
1	EA	MORTISE CYLINDER	80-102 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	COORDINATOR	COR52 X FL X BRKTS	628	IVE
1	EA	ASTRAGAL	139SP X 5050	600	NGP
2	EA	SURFACE CLOSER	1461 RW/PA	689	LCN
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE
2	EA	MAGNETIC HOLD-OPEN	SEM 7830/40/50 24V (AS REQ'D)	AL	LCN
1	SET	SEALS	5050B	BRN	NGP
1	EA	POWER SUPPLY	PS902		SCE

CARD READER & WIRING BY SECURITY CONTRACTOR.
MAG-HOLDERS TO BE WIRED INTO THE FIRE ALARM SYSTEM FOR IMMEDIATE RELEASE UPON ACTIVATION.

HW SET: 02

2	EA	POWER TRANSFER	EPT-10	689	VON
2	EA	CONTINUOUS HINGE	X HINGE GUARD X ADJUST-A-STUD X EPT PREP	630	IVE
1	EA	FIRE EXIT HARDWARE	QEL9827EO-F LBR	626	VON
1	EA	FIRE EXIT HARDWARE	QEL9827L-F 996L LBR	626	VON
1	EA	RIM CYLINDER	80-129 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	SET	ASTRAGAL	PER DOOR MANUFACTURER		
1	EA	AUTO. OPERATOR	9553	628	LCN
2	EA	KICK PLATE	8400 10X2 LDW	630	IVE

2	EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630	
2	EA	DOME STOP	FS436	626	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	POWER SUPPLY	PS914-2Q-FA	GRY	VON
2	EA	ACTUATOR, WALL MOUNT	8310-813		LCN

CARD READER & WIRING BY SECURITY CONTRACTOR.

HW SET: 03

6	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	FIRE EXIT HARDWARE	9827EO-F-LBR	626	VON
1	EA	FIRE EXIT HARDWARE	9827L-F-LBR 996L	626	VON
1	EA	RIM CYLINDER	80-129 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	ASTRAGAL	139SP X 5050	600	NGP
2	EA	SURFACE CLOSER	1461 RW/PA	689	LCN
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE
2	EA	MAGNETIC HOLD-OPEN	SEM 7830/40/50 24V (AS REQ'D)	AL	LCN
1	SET	SEALS	5050B	BRN	NGP

MAG-HOLDERS TO BE WIRED INTO THE FIRE ALARM SYSTEM FOR IMMEDIATE RELEASE UPON ACTIVATION.

HW SET: 04

5	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	PANIC HARDWARE	9875L 996L	626	VON
1	EA	MORTISE CYLINDER	80-102 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	ELECTRIC STRIKE	6223 FSE 24VDC	630	VON
1	EA	COORDINATOR	COR52 X FL X BRKTS	628	IVE
1	SET	ASTRAGAL	137NA	CL	NGP
1	EA	AUTO. OPERATOR	9553	628	LCN
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE
4	EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630	
2	EA	DOME STOP	FS436	626	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	POWER SUPPLY	PS902		SCE
2	EA	ACTUATOR, WALL MOUNT	8310-813		LCN
1	EA	DOOR SEQUENCER	8310-849		LCN

HW SET: 05

5	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE

1	EA	PANIC HARDWARE	9875L 996L	626	VON
1	EA	MORTISE CYLINDER	80-102 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	ELECTRIC STRIKE	6223 FSE 24VDC	630	VON
1	EA	COORDINATOR	COR52 X FL X BRKTS	628	IVE
1	SET	ASTRAGAL	137NA	CL	NGP
1	EA	AUTO. OPERATOR	9553	628	LCN
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE
2	EA	DOME STOP	FS436	626	IVE
2	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS902		SCE
2	EA	ACTUATOR, WALL MOUNT	8310-813		LCN
1	EA	DOOR SEQUENCER	8310-849		LCN

HW SET: 06

6	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	AUTO FLUSH BOLT	FB41T (TOP ONLY)	630	IVE
1	EA	PANIC HARDWARE	9875L 996L	626	VON
1	EA	MORTISE CYLINDER	80-102 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	COORDINATOR	COR52 X FL X BRKTS	628	IVE
1	SET	ASTRAGAL	137NA	CL	NGP
2	EA	SURFACE CLOSER	1461 RW/PA	689	LCN
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE
2	EA	WALL STOP	WS407CVX	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

HW SET: 07

3	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	FIRE EXIT HARDWARE	QEL98L-F 996L	626	VON
1	EA	RIM CYLINDER	80-129 ICX	626	SCH
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH
1	EA	SURFACE CLOSER	1461 RW/PA	689	LCN
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE
1	EA	DOME STOP	FS436	626	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	POWER SUPPLY	PS914-2Q-FA	GRY	VON

CARD READER & WIRING BY SECURITY CONTRACTOR.

HW SET: 09A

3	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE
1	EA	PANIC HARDWARE	98L-BE 996L-BE	626	VON
1	EA	SURFACE CLOSER	1461 HW/PA	689	LCN
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE
1	EA	MOP PLATE	8400 4X1 LDW	630	IVE
1	EA	DOME STOP	FS436	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 09
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	PASSAGE SET	ND10S RHO	626	SCH	4000, F75
1 EA	SURFACE CLOSER	1461 HW/PA	689	LCN	C02011/C02021
1 EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1 EA	MOP PLATE	8400 4X1 LDW	630	IVE	J102
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 10
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	PRIVACY SET	ND40S RHO	626	SCH	4000, F76
1 EA	SURFACE CLOSER	1461 HW/PA	689	LCN	C02011/C02021
1 EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1 EA	MOP PLATE	8400 4X1 LDW	630	IVE	J102
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 11
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	ENTRANCE LOCK	ND53BDC RHO	626	SCH	4000, F109
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 12
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	ENTRANCE LOCK	ND53BDC RHO	626	SCH	4000, F109
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 HW/PA	689	LCN	C02011/C02021
2 EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 13
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	ENTRANCE LOCK	ND53BDC RHO	626	SCH	4000, F109
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 HW/PA	689	LCN	C02011/C02021
2 EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 14
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	ENTRANCE LOCK	ND53BDC RHO	626	SCH	4000, F109
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 15
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1 EA	DOME STOP	FS436	626	IVE	L32141
1 SET	SEALS	5050B	BRN	NGP	R0E154

HW SET: 16
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 17
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
2 EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 18
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	DOME STOP	FS436	626	IVE	L32141
3 EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 19
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1 EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
2 EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1 EA	DOME STOP	FS436	626	IVE	L32141
1 SET	SEALS	5050B	BRN	NGP	R0E154

HW SET: 20
Each SINGLE DOOR To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
2 EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1 EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE	
1 EA	EU STOREROOM LOCK	ND80BDCEU RHO	626	SCH	4000
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1 EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1 EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		

1	EA	DOME STOP	FS436	626	IVE	L32141
3	EA	SILENCER	SR64	GRY	IVE	L03011
1	EA	POWER SUPPLY	PS902		SCE	

CARD READER & WIRING BY SECURITY CONTRACTOR.

HW SET: 21
Each SINGLE DOOR To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
2	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE	
1	EA	EU STOREROOM LOCK	ND80BDCEU RHO	626	SCH	4000
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1	EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1	EA	WALL STOP	WS407CVX	630	IVE	L52251
1	SET	SEALS	5050B	BRN	NGP	R0E154
1	EA	POWER SUPPLY	PS902		SCE	

CARD READER & WIRING BY SECURITY CONTRACTOR.

HW SET: 22
Each SINGLE DOOR To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
2	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	EA	ELECTRIC HINGE	TYPE AS REQUIRED X 4-WIRE	652	IVE	
1	EA	EU STOREROOM LOCK	ND80BDCEU RHO	626	SCH	4000
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1	EA	SURFACE CLOSER	1461 SCUSH	689	LCN	C02011/C02021
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
2	EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1	SET	SEALS	5050B	BRN	NGP	R0E154
1	EA	POWER SUPPLY	PS902		SCE	

CARD READER & WIRING BY SECURITY CONTRACTOR.
REPLACE EXISTING HARDWARE.
VERIFY EXISTING CONDITIONS.

HW SET: 23
Each SINGLE DOOR To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	EA	PASSAGE SET	ND10S RHO	626	SCH	4000, F75
1	EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1	EA	MOP PLATE	8400 4X1 LDW	630	IVE	J102

1	EA	DOME STOP	FS436	626	IVE	L32141
3	EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 24
Each SINGLE DOOR To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	EA	PRIVACY SET	ND40S RHO	626	SCH	4000, F76
1	EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
1	EA	MOP PLATE	8400 4X1 LDW	630	IVE	J102
1	EA	DOME STOP	FS436	626	IVE	L32141
3	EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 25
Each PAIR OF DOORS To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
6	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE	TYPE 25
1	EA	DUST PROOF STRIKE	DP2	626	IVE	L14011
1	EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1	EA	COORDINATOR	COR52 X FL X BRKTS	628	IVE	TYPE 21A
1	SET	ASTRAGAL	137NA	CL	NGP	
2	EA	SURFACE CLOSER	1461 SHCUSH	689	LCN	C02011/C02021
2	EA	KICK PLATE	8400 10X1 LDW	630	IVE	J102
2	EA	SILENCER	SR64	GRY	IVE	L03011

HW SET: 26
Each SINGLE DOOR To Have:

QTYUM		DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
3	EA	HINGE	QUANTITY & TYPE AS REQUIRED	652	IVE	
1	EA	ENTRANCE LOCK	ND53BDC RHO	626	SCH	4000, F109
1	EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1	EA	SURFACE CLOSER	1461 RW/PA	689	LCN	C02011/C02021
1	EA	KICK PLATE	8400 10X2 LDW	630	IVE	J102
2	EA	EDGE GUARDS	J208M / J211 (VERIFY), CUT: HARDWARE	630		
1	EA	WALL STOP	WS407CVX	630	IVE	L52251
1	SET	SEALS	5050B	BRN	NGP	R0E154

HW SET: 27

ALL HARDWARE BY DOOR MANUFACTURER

HW SET: 28
Each To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
1 EA	STOREROOM LOCK	ND80BDC RHO	626	SCH	4000, F86
1 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING

EXISTING. REPLACE STORAGE LOCKSET.
VERIFY EXISTING CONDITIONS.

HW SET: 29
Each To Have:

QTYUM	DESCRIPTION	CATALOGNO	FIN	MFR	ANSI/BHMA
1 EA	DOOR CORD	788-18		SCE	
1 EA	PANIC HARDWARE	CX98L 996L	626	VON	
1 EA	MORTISE CYLINDER	80-102 ICX	626	SCH	
1 EA	RIM CYLINDER	80-129 ICX	626	SCH	
2 EA	SFIC CORE	KEY TO EXISTING SYSTEM	626	SCH	KEY TO EXISTING
1 EA	POWER SUPPLY	PS914-2RS-FA	GRY	VON	

EXISTING. ADD DELAYED EGRESS.
VERIFY EXISTING CONDITIONS.
CARD READERS & WIRING BY SECURITY CONTRACTOR.

HW SET: 30

EXISTING TO REMAIN

- - - E N D - - -