

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM E 283 (2004)

Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.1 (2000) Butts and Hinges

ANSI/BHMA A156.2 (2003) Bored and Preassembled Locks and Latches

ANSI/BHMA A156.3 (2001) Exit Devices

ANSI/BHMA A156.4 (2000) Door Controls - Closers

ANSI/BHMA A156.5 (2001) Auxiliary Locks & Associated Products

ANSI/BHMA A156.6 (2001) Architectural Door Trim

ANSI/BHMA A156.7 (2003) Template Hinge Dimensions

ANSI/BHMA A156.8 (2000) Door Controls - Overhead Holders and Holders

ANSI/BHMA A156.13 (2002) Mortise Locks & Latches Series 1000

ANSI/BHMA A156.15 (2001) Release Devices - Closer Holder, Electromagnetic and Electromechanical

ANSI/BHMA A156.16 (2002) Auxiliary Hardware

ANSI/BHMA A156.18 (2000) Recommended Practices for Materials and Finishes

ANSI/BHMA A156.21 (2001) Thresholds

ANSI/BHMA A156.22 (2003) Door Gasketing and Edge Seal Systems

ANSI/BHMA A156.26 (2000) Continuous Hinges

ANSI/BHMA A156.28 (2000) Recommended Practices for Keying Systems

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101 (2006) Life Safety Code

NFPA 80 (1999) Fire Doors and Fire Windows

STEEL DOOR INSTITUTE (SDI)

SDI 100 (1998) Standard Steel Doors and Frames

UNDERWRITERS LABORATORIES (UL)

UL Bld Mat Dir (2006) Building Materials Directory

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Group submittals of complementary and related products and materials as needed to represent total assemblies and facilitate concurrent coordination review. Example: Submit doors, door frames and door hardware together. The Government may withhold action on submittals requiring coordination with other submittals until related submittals are received.

The following shall be submitted in accordance with Section 01 33 00

SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Hardware schedule; G

Keying system

SD-03 Product Data

Hardware items; G

SD-08 Manufacturer's Instructions

Installation

SD-10 Operation and Maintenance Data

Hardware Schedule items, Data Package 1; G

Submit in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

SD-11 Closeout Submittals Key bitting

1.3 HARDWARE SCHEDULE

Prepare and submit hardware schedule in the following form:
Reference Mfr. UL Mark

Publi-	Name	Key	(If fire	BHMA Hard-	cation	and Con-	rated Finish
ware Quan-	Type	Catalog	trol	and Designa-			
Item tity	Size	No.	Finish	No.	Symbols	listed)	tion

1.4 KEY BITTING CHART REQUIREMENTS

1.5 Submit key bitting charts to the Contracting Officer prior to completion of the work. Include:

- Complete listing of all keys (AA1, AA2, etc.).
- Complete listing of all key cuts (AA1-123456, AA2-123458).
- Tabulation showing which key fits which door.

- d. Copy of floor plan showing doors and door numbers.
- e. Listing of 20 percent more key cuts than are presently required in each master system.

1.6 QUALITY ASSURANCE

1.5.1 Hardware Manufacturers and Modifications

Provide, as far as feasible, locks, hinges, and closers of one lock, hinge, pivot, or closer manufacturer's make. Modify hardware as necessary to provide features indicated or specified.

1.5.2 Key Shop Drawing Coordination Meeting

Prior to submission of the key shop drawing, the Contractor shall coordinate the keying requirements with the Contracting Officer, using Activity and Facility Locksmith shall meet to discuss key requirements for the facility.

1.6 DELIVERY, STORAGE, AND HANDLING

Deliver hardware in original individual containers, complete with necessary appurtenances including fasteners and instructions. Mark each individual container with item number as shown in hardware schedule. Deliver permanent keys and removable cores to the Contracting Officer, either directly or by certified mail. Deliver construction master keys with the locks.

PART 2 PRODUCTS

2.1 TEMPLATE HARDWARE

Hardware to be applied to metal or to prefinished doors shall be made to template. Promptly furnish template information or templates to door and frame manufacturers. Template hinges shall conform to ANSI/BHMA A156.7. Coordinate hardware items to prevent interference with other hardware.

2.2 HARDWARE FOR FIRE DOORS AND EXIT DOORS

Provide all hardware necessary to meet the requirements of NFPA 80 for fire doors and NFPA 101 for exit doors, as well as to other requirements specified, even if such hardware is not specifically mentioned under paragraph entitled "Hardware Schedule." Such hardware shall bear the label of Underwriters Laboratories, Inc., and be listed in UL Bld Mat Dir or labeled and listed by another testing laboratory acceptable to the Contracting Officer.

2.3 HARDWARE ITEMS

Hinges, pivots, locks, latches, exit devices, bolts, and closers shall be clearly and permanently marked with the manufacturer's name or trademark where it will be visible after the item is installed. For closers with covers, the name or trademark may be beneath the cover.

2.3.1 Hinges

ANSI/BHMA A156.1, 4 1/2 by 4 1/2 inches unless otherwise specified. Construct loose pin hinges for exterior doors and reverse-bevel interior doors so that pins will be nonremovable when door is closed.

2.3.2 Continuous-Geared Hinges

ANSI/BHMA A156.26. Fully concealed type, minimum 1/8 inch thick, extruded aluminum, pinless, geared hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame; joined by a continuous extruded aluminum channel cover; with concealed, self-lubricating thrust bearings spaced not more than 6 inches on center.

Provide with dark bronze anodized finish after milling and drilling are complete. Fabricate hinges to template screw locations.

- a. Cycle Grade 1-300.
- b. Abuse Grade 1.
- c. Vertical Wear Grade 1.

2.3.3 Locks and Latches

2.3.3.1 Mortise Locks and Latches

ANSI/BHMA A156.13, Series 1000, Operational Grade 1, Security Grade 2. Provide factory-installed lead lining in locks for lead-shielded doors. Provide mortise locks with escutcheons not less than 7 by 2 1/4 inches with a bushing at least 1/4 inch long. Cut escutcheons to suit cylinders and provide trim items with straight, beveled, or smoothly rounded sides, corners, and edges. Lever handles and roses of mortise locks shall have screwless shanks and no exposed screws.

2.3.3.2 Auxiliary Locks

ANSI/BHMA A156.5, Grade 1.

2.3.3.3 Electro-Mechanical Locks

BHMA A156.13, Series 1000, Operational Grade 1, Security Grade 2. Provide factory-installed lead lining in locks for lead-shielded doors. Provide mortise locks with escutcheons not less than 7 by 2 1/4 inches with a bushing at least 1/4 inch long. Cut escutcheons to suit cylinders and provide trim items with straight, beveled, or smoothly rounded sides, corners, and edges. Knobs and roses Levers of mortise locks shall have Screw-less shanks and concealed set screws. Locksets shall be low voltage continuous duty solenoid operated which is unlocked by power application. Units shall have built in "Request to Exit Switch". Provide all locks with "Temperature Control Modules" which will allow long term unlocking without overheating. Replacement parts shall be available.

2.3.3.4 Lock Power Supplies

Provide boxed power supplies of sufficient size to accommodate lockset solenoids as scheduled. Units "UL Listed" with built-in circuit breaker or fuse for protection against surges. Inputs of 115 vac with 24 vdc output.

2.3.4 Exit Devices

ANSI/BHMA A156.3, Grade 1. Provide adjustable strikes for rim type and vertical rod devices. Provide open back strikes for pairs of doors with mortise and vertical rod devices. Touch bars shall be provided in lieu of conventional crossbars and arms. Provide escutcheons, not less than 7 by 2 1/4 inches.

2.3.5 Cylinders and Cores

Provide cylinders and cores for new locks, including locks provided under other sections of this specification. Cylinders and cores shall have seven pin tumblers. Cylinders shall be products of one manufacturer, and cores shall be the products of one manufacturer. Rim cylinders, mortise cylinders, and lever handles of bored locksets shall have interchangeable cores which are removable by special control keys. Stamp each interchangeable core with a key control symbol in a concealed place on the core. Cores shall be by BEST to provide an extension of the existing grand master key. BEST Lock shall furnish final cores along with core keys to the North Chicago VA Medical Center.

2.3.6 Keying System

Develop keying system in accordance with ANSI/BHMA A156.28. Provide an extension of the existing keying system. Existing locks were manufactured by BEST and have interchangeable cores. Provide a construction master keying system construction interchangeable cores. Provide key cabinet as specified.

2.3.7 Lock Trim

Cast, forged, or heavy wrought construction and commercial plain design.

2.3.7.1 Lever Handles and Roses

In addition to meeting test requirements of ANSI/BHMA A156.2 and ANSI/BHMA A156.13, lever handles, roses, and escutcheons shall be 0.050 inch thick if unreinforced. If reinforced, outer shell shall be 0.035 inch thick and combined thickness shall be 0.070 inch, except handle shanks shall be 0.060 inch thick.

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2.3.7.2 Lever Handles

Provide lever handles in lieu of knobs throughout the Project. Lever handles for exit devices shall meet the test requirements of ANSI/BHMA A156.13 for mortise locks. Lever handle locks shall have a breakaway feature (such as a weakened spindle or a shear key) to prevent irreparable damage to the lock when a force in excess of that specified in ANSI/BHMA A156.13 is applied to the lever handle. Lever handles shall return to within 1/2 inch of the door face.

2.3.7.3 Texture

Provide knurled or abrasive coated lever handles for doors which are accessible to blind persons and which lead to dangerous areas.

2.3.8 Keys

Furnish one file key, one duplicate key, and one working key for each key change and for each master keying system. Furnish one additional working key for each lock of each keyed-alike group. Furnish 4 construction master keys, and 2 control keys for removable cores. Furnish a quantity of key blanks equal to 20 percent of the total number of file keys. Stamp each key with appropriate key control symbol and "U.S. property - Do not duplicate." Do not place room number on keys.

2.3.9 Door Bolts

ANSI/BHMA A156.16. Provide dustproof strikes for bottom bolts, except for doors having metal thresholds. Automatic latching flush bolts: ANSI/BHMA A156.3.

2.3.10 Closers

ANSI/BHMA A156.4, Series C02000, Grade 1, with PT 4C. Provide with brackets, arms, mounting devices, fasteners, full size covers, except at storefront mounting, pivots, and other features necessary for the particular application. Size closers in accordance with manufacturer's recommendations, or provide multi-size closers, Sizes 1 through 6, and list sizes in the Hardware Schedule. Provide manufacturer's 10 year warranty.

2.3.10.1 Identification Marking

Engrave each closer with manufacturer's name or trademark, date of manufacture, and manufacturer's size designation located to be visible

after installation.

2.3.10.2 Closer w/EHO (Electronic Hold Open)

Provide multi-point hold-open closers of same manufacturer of standard closers and of same grade and size requirements, except with built-in electronic holding assembly for release of doors when activated by fire/smoke detection and alarm system. UL listed and approved.

2.3.11 Electric Power Closer/Operator

Electrically powered door assister assembly, cast iron cylinder, fully adjustable, with high efficiency motor combined with custom designed gear system. Provide with special clutch breakaway function to prevent damage to operator, and digital controller module. Provide 24 V DC with transformer for 120 V AC input power, circuit breaker switch, self resetting fuses, and terminal strips for field wiring.

a. Wall Plate Actuator: Hard wired low voltage actuator with round, stainless steel touch plate of 6 inch diameter. Provide one actuator at each side of door.

b. Provide with flush mount box for flush mount in drywall construction.

c. Post Mounted Actuator: Provide as indicated, Post Mounted Push Plate Actuator. Unit shall be round 1-7/8 inch diameter Stainless Steel 36 inches in height. Furnish with UL listed Push Plate Switch 1-1/2 inch wide x 6-1/4 inch tall momentary contact action. Face Plate shall be engraved with Blue International symbol for accessibility and "Push to Open" engraved in white letters. Provide weatherproof seals and anchor plates as required.

2.3.12 Door Position Switch

Switch and Magnet shall fit ANSI door cutout for mortise installation. The switch size shall be 1.25 inches wide x 4.875 inches long. Faceplates are made of 14 gage stainless steel with mounting holes 4.125 inch centers countersunk for number 8-32 flathead screws. Provide with single pole double throw outputs. Furnish one for each door leaf. Coordinate position in door and frame with other hardware applications.

2.3.13 Overhead Stops/Holders

ANSI/BHMA A156.8.

2.3.14 Closer Holder-Release Devices

ANSI/BHMA A156.15.

2.3.15 Push-Pull Door Trim

ANSI/BHMA A156.6.

2.3.16 Door Protection Plates

ANSI/BHMA A156.6.

2.3.16.1 Sizes of Mop and Kick Plates

Width for single doors shall be 2 inches less than door width; width for pairs of doors shall be one inch less than door width. Height of kick plates shall be 8 inches for flush doors. Height of mop plates shall be 4.

2.3.17 Door Stops and Silencers

ANSI/BHMA A156.16. Silencers Type L03011. Provide three silencers for each single door, two for each pair.

2.3.18 Thresholds

ANSI/BHMA A156.21. Use J35100, with vinyl or silicone rubber insert in face of stop, for exterior doors opening out, unless specified otherwise.

a. Type A: Exterior with gasketed stop.

2.3.19 Weather Stripping Gasketing

ANSI/BHMA A156.22. Provide the type and function designation where specified in paragraph entitled "Hardware Schedule". A set shall include head and jamb seals, sweep strips, and, for pairs of doors, astragals. Air leakage of weather stripped doors shall not exceed 1.25 cubic feet per minute of air per square foot of door area when tested in accordance with ASTM E 283. Weather stripping shall be one of the following:

2.3.19.1 Extruded Aluminum Retainers

Extruded aluminum retainers not less than 0.050 inch wall thickness with vinyl, neoprene, silicone rubber, or polyurethane inserts. Aluminum shall be bronze anodized.

2.3.20 Soundproofing Gasketing

ANSI/BHMA A156.22. A set shall include adjustable doorstops at head and jambs and an automatic door bottom, both of extruded aluminum, clear (natural) anodized, surface applied, with vinyl fin seals between plunger and housing. Doorstops shall have solid neoprene tube, silicone rubber, or closed-cell sponge gasket. Door bottoms shall have adjustable operating rod and silicone rubber or closed-cell sponge neoprene gasket. Doorstops shall be mitered at corners. Soundproof gasketing shall be rated for the door rating scheduled. Provide the type and function designation where specified in paragraph entitled "Hardware Sets".

2.3.21 Rain Drips

Extruded aluminum, not less than 0.08 inch thick, bronze anodized. Set drips in sealant conforming to Section 07 92 00 JOINT SEALANTS and fasten with stainless steel screws.

2.3.21.1 Door Rain Drips

Approximately 1 1/2 inches high by 5/8 inch projection. Align bottom with bottom edge of door.

2.3.21.2 Overhead Rain Drips

Approximately 1 1/2 inches high by 2 1/2 inches projection, with length equal to overall width of door frame. Align bottom with door frame rabbet.

2.3.22 Door Viewer

Grade 1, adjustable for doors 1-3/4 inch to 2-1/4 inch. Optical lens with wide angle view.

2.3.23 Special Tools

Provide special tools, such as spanner and socket wrenches and dogging keys, required to service and adjust hardware items.

2.4 FASTENERS

Provide fasteners of proper type, quality, size, quantity, and finish with hardware. Fasteners exposed to weather shall be of nonferrous metal or stainless steel. Provide fasteners of type necessary to accomplish a permanent installation.

2.5 FINISHES

ANSI/BHMA A156.18, as specified or scheduled in Hardware Sets.

2.6 KEY CABINET AND CONTROL SYSTEM

ANSI/BHMA A156.5, Type required to yield a capacity (number of hooks) 50 percent greater than the number of key changes used for door locks.

PART 3 EXECUTION

3.1 INSTALLATION

Install hardware in accordance with manufacturers' printed instructions. Fasten hardware to wood surfaces with full-threaded wood screws or sheet metal screws. Provide machine screws set in expansion shields for fastening hardware to solid concrete and masonry surfaces. Provide toggle bolts where required for fastening to hollow core construction. Provide through bolts where necessary for satisfactory installation.

3.1.1 Weather Stripping Installation

Handle and install weather stripping so as to prevent damage. Provide full contact, weather-tight seals. Doors shall operate without binding.

3.1.1.1 Stop-Applied Weather Stripping

Fasten in place with color-matched sheet metal screws not more than 9 inches o.c. after doors and frames have been finish painted.

3.1.2 Soundproofing Installation

Install as specified for stop-applied weather stripping.

3.1.3 Threshold Installation

Extend thresholds the full width of the opening and notch end for jamb stops. Set thresholds in a full bed of sealant and anchor to floor with cadmium-plated, countersunk, steel screws in expansion sleeves.

3.2 FIRE DOORS AND EXIT DOORS

Install hardware in accordance with NFPA 80 for fire doors, NFPA 101 for exit doors.

3.3 HARDWARE LOCATIONS

SDI 100, unless indicated or specified otherwise.

a. Kick Plates: Push side of single-acting doors.

b. Mop Plates: Bottom flush with bottom of door.

3.4 KEY CABINET AND CONTROL SYSTEM

Locate where directed. Tag one set of file keys and one set of duplicate

keys. Place other keys in appropriately marked envelopes, or tag each key. Furnish complete instructions for setup and use of key control system. On tags and envelopes, indicate door and room numbers or master or grand master key.

3.5 FIELD QUALITY CONTROL

After installation, protect hardware from paint, stains, blemishes, and other damage until acceptance of work. Submit notice of testing 15 days before scheduled, so that testing can be witnessed by the Contracting Officer. Adjust hinges, locks, latches, bolts, holders, closers, and other items to operate properly. Demonstrate that permanent keys operate respective locks, and give keys to the Contracting Officer. Correct, repair, and finish, as directed, errors in cutting and fitting and damage to adjoining work.

3.6 HARDWARE SETS

Hardware for aluminum doors shall be provided under Section 08 11 16

LIST OF MANUFACTURERS

CONTINUOUS HINGES:	ROTON OR APPROVED EQUAL
BUTT HINGES:	MCKINNEY OR APPROVED EQUAL
EXIT DEVICES:	VON DUPRIN OR APPROVED EQUAL
LOCKS:	BEST OR APPROVED EQUAL
PUBLIC TOILET DEADLOCKS:	SARGENT OR APPROVED EQUAL
CYLINDERS:	BEST OR APPROVED EQUAL
FLUSH BOLTS:	ROCKWOOD OR APPROVED EQUAL
DUST-PROOF STRIKES:	ROCKWOOD OR APPROVED EQUAL
WALL STOPS:	ROCKWOOD OR APPROVED EQUAL
CLOSERS:	LCN OR APPROVED EQUAL
PUSH-PULLS:	ROCKWOOD OR APPROVED EQUAL
KICK PLATES:	ROCKWOOD OR APPROVED EQUAL
THRESHOLDS:	NATIONAL GUARD PRODUCTS OR APPROVED EQUAL
WEATHERSTRIP:	NATIONAL GUARD PRODUCTS OR APPROVED EQUAL
SWEEPS:	NATIONAL GUARD PRODUCTS OR APPROVED EQUAL

HARDWARE SET #1

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-D-3-H-626 - BRASS CORE
1 - CLOSER 4111 X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #2

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
1 - CLOSER 4011 X 689 X WS/MS/TB
1 - WALL STOP 406 X 630
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #3

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - OFFICE LOCKSET 45H-7-AB-3-H-626 - BRASS CORE
1 - WALL STOP 406 X 630
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #4

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE
1 - WALL STOP 406 X 630
1 - CLOSER 4011 X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #5

3 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
1 - EXIT DEVICE 99L X 996L-R(03) X 299 X 626
1 - RIM CYLINDER 1E72-RP-626 - BRASS CORE
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 34 X 630

HARDWARE SET #6

6 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE
1 - PAIR OF FLUSH BOLTS 555 X 626 - 12" TOP & BOTTOM ROD
1 - DUST-PROOF STRIKE 570 X 626

HARDWARE SET #7

1 - ROTON HINGE 780-224HD X 83" X CLEAR X WS/SDS
1 - EXIT DEVICE 99L X 996L-R(03) X 299 X 626
1 - RIM CYLINDER 1E72-RP-626 - BRASS CORE
1 - WALL STOP 406 X 630
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #8

3 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE

HARDWARE SET #9

2 - ROTON HINGES 780-224HD X 83" X CLEAR X WS/SDS
2 - EXIT DEVICES 9927L-LBR X 996L-V(03) X 299 X 626
2 - RIM CYLINDERS 1E72 X RP X 626 - BRASS CORE
2 - CLOSERS 4111-H-CUSH X 689 X WS/MS/TB
2 - KICK PLATES 8 X 34 X 630
AT ARCH G147 ADD 2 WALL STOPS 406 X 630

HARDWARE SET #10

2 - ROTON HINGES 780-224HD X 83" X CLEAR X WS/SDS
2 - EXIT DEVICES 9927L-LBR X 996L-V(03) X 299 X 626
2 - RIM CYLINDERS 1E72 X RP X 626 - BRASS CORE
2 - WALL STOPS 406 X 630
2 - CLOSERS 4111-CUSH X 689 X WS/MS/TB
2 - KICK PLATES 8 X 28 X 630
2 - THRESHOLD 425 X 64" 3/4" - 20 MS X LA
2- WEATHERSTRIP A626A IPC - 30" X 2PCS-24" X TEKS
2- SWEEPS C627A X 30" X TEKS

HARDWARE SET #11

1 - ROTON HINGE 780-224HD-UL-STUD X 82" X CLEAR X WS/SDS
1 - EXIT DEVICE 99L-F X 996L-R X 299F X 626
1 - RIM CYLINDER 1E72 X RP X 626 - BRASS CORE
1 - WALL STOP 406 X 630
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630
AT ARCH #ST2B & G134B - KICK PLATE 8 X 48 X 630

HARDWARE SET #12

2 - ROTON HINGES 780-224HD X 83" X CLEAR X WS/SDS
1 - WALL STOP 406 X 630 - RHR LEAF
2 - CLOSERS 4111-H-CUSH X 689 X WS/MS/TB
2 - DUMMY PUSH BARS 330 X 626
2 - PULLS 990DT X 626
2 - KICK PLATES 8 X 34 X 630

HARDWARE SET #13

2 - ROTON HINGES 780-224HD X 83" X CLEAR X ASDS
1 - EXIT DEVICE 99NL X 990NL-R X 299 X 626
1 - EXIT DEVICE 99DT X 990DT X 299 X 626
1 - RIM CYLINDER 1E72-RP-626 - BRASS CORE
1 - MORTISE CYLINDER 1E74-C4-RP3-626 - BRASS CORE - FOR KEYED

REMOVABLE MULLION

2 - CLOSER 4111-H-CUSH X 689 X WS/MS/TB
1 - KICK PLATES 8 X 34 X 630
1 - THRESHOLD 425 X 76" X 1/4-20 MS X LA
1 - SET OF WEATHERSTRIP A626A 1PC-72" X 4PCS-84" X TEKS - INCLUDES
MULLION
2 - SWEEPS C627A X 36" X TEKS
1 - KEYED REMOVABLE MULLION KR4954 X 7'0 X SP28

HARDWARE SET #14

2 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - ELECTRIC HINGE T4A-3786 CC6 5 X 4-1/2 X 626
1 - WALL STOP 406 X 630
1 - CLOSER 4111-H-CUSH X 689 X WS/MS/TB

HARDWARE SET #15

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - OFFICE LOCK 45H-7-AB-3-H-626 - BRASS CORE
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #16

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE

- 1 - WALL STOP 406 630
- 1 - CLOSER 4111-H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #17

- 1 - ROTON HINGE 780-224HD-UL-STUD X 83" X CLEAR X ASDS
- 1 - CLASSROOM LOCKSET 45H-7-R-3-H-626 - BRASS CORE
- 1 - WALL STOP 406 X 630
- 1 - CLOSER 4011 X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #18

- 1 - ROTON HINGE 780-224HD X 83" CLEAR X WS/SDS
- 1 - PUBLIC TOILET DEADLOCK 4878 X 630
- 2 - MORTISE CYLINDERS 1E74-C4-RP3-626 - BRASS CORE
- 1 - WALL STOP 406 X 630
- 1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
- 1 - PUSH PLATE 70F X 630 X 8 X 16
- 1 - PULL PLATE 111 X 70C X 630
- 1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #19

- 1 - ELECTRIC ROTON HINGE 780-224HD-CC6 - 83" CLEAR ASDS
- 1 - ELECTRIC LOCK 45H-7-DEU-3-H-626
- 1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 46 X 630
- 1 - KICK PLATE

HARDWARE SET #20

- 2 - HINGES T4A-3786 5 X 4-1/2 X 626
- 1 - ELECTRIC HINGE T4A-3786 CC6 5 X 4-1/2 X 626
- 1 - ELECTRIC LOCK 45HW-7-DEU-3-H-626
- 1 - CLOSER 4111-H-CUSH X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #21

- 2 - HINGES T4A-3786 5 X 4-1/2 X 626
- 1 - ELECTRIC HINGE T4A-3786 CC6 5 X 4-1/2 X 626
- 1 - ELECTRIC LOCK 45HW-7-DEU-3-H-626
- 1 - CLOSER 4011-H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 46 X 630

HARDWARE SET #22

- 3 - HINGES T4A-3786 5 X 4-1/2 X 626
- 1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
- 1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #23

- 1 - ROTON HINGE 780-224HD X 83" X CLEAR X WS/SDS
- 1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE

- 1 - WALL STOP 406 X 630
- 1 - CLOSER 4011-H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 46 X 630

HARDWARE SET #24

- 3 - HINGES T4A-3786 5 X 4-1/2 X 626
- 1 - OFFICE LOCK 45H-7-AB-3-H-626
- 1 - CLOSER 4011-H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 46 X 630

HARDWARE SET #25

- 1 - ROTON HINGE 780-224HD X 83" X CLEAR X WS/SDS
- 1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
- 1 - WALL STOP 406 X 630
- 1 - CLOSER 4111-H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 46 X 630

HARDWARE SET #26

- 2 - ROTON HINGES 780-224HD X 83" X CLEAR X WS/SDS
- 2 - EXIT DEVICES 9927L-LBR X 996L-V(03) X 299 X 626
- 2 - RIM CYLINDERS 1E72-RP-626 - BRASS CORE
- 2 - WALL STOPS 406 X 630
- 2 - CLOSERS 4111-H-CUSH X 689 X WS/MS/TB
- 2 - KICK PLATES 8 X 36

HARDWARE SET #27

- 2 - ELECTRIC ROTON HINGES 780-224HD - EPT - 83" - CLEAR X ASDS
- 2 - ELECTRIC POWER TRANSFERS EPT10-SP28
- 2 - ELECTRIC EXIT DEVICE EL9927L-LBR X 996L-V(03) X 299 X 626
- 2 - RIM CYLINDERS 1E72-RP-626 - BRASS CORE
- 2 - CLOSERS 4111-CUSH X 689 X WS/MS/TB
- 2 - KICK PLATES 8 X 46 X 630

HARDWARE SET #28

- 3 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
- 1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
- 1 - CLOSER 4011H X 689 X WS/MS/TB
- 1 - KICK PLATE 8 X 34

HARDWARE SET #29

- 3 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
- 1 - PRIVACY SET 45H-0-L-3-H-626
- 1 - KICK PLATE 8 X 28 X 630

HARDWARE SET #30

- 1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
- 3 - HINGES T4A-3786 5 X 4-1/2 X 626

HARDWARE SET #31

- 3 - HINGES TA-2714 4-1/2 X 4-1/2 X 626

1 - PASSAGE SET 45H-0-N-3-H-626
1 - WALL STOP 406 X 630
1 - CLOSER 4011 X 689
1 - KICK PLATE 8 X 34 X 630

HARDWARE SET #32

3 - HINGES T4A-3386 5 X 4-1/2 X 626
1 - PRIVACY SET 45H-0-L-3-H-626
1 - WALL STOP 406 X 630
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #33

3 - HINGES T4A-3786 5 X 4-1/2 X 626
1 - CLASSROOM LOCK 45H-7-R-3-H-626 - BRASS CORE
1 - CLOSER 4111 X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630

HARDWARE SET #34

6 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE
1 - SET OF FLUSH BOLTS 555 X 626 - 12" TOP & BOTTOM ROD
1 - DUST-PROOF STRIKE 570 X 626
1 - WALL STOP 406 X 630 - RHR LEAF
1 - CLOSER 4111-H- X 689 X WS/MS/TB
2 - KICK PLATES 8 X 28 X 630

HARDWARE SET #35

6 - HINGE TA-2714 4-1/2 X 4-1/2 X 626
1 - STOREROOM LOCK 45H-7-D-3-H-626 - BRASS CORE
1 - SET OF FLUSH BOLTS 555 X 626 - 12" TOP & BOTTOM ROD
1 - DUST-PROOF STRIKE 570 X 626
2 - WALL STOP 406 X 630
1 - CLOSER 4011-H X 689 X WS/MS/TB
2 - KICK PLATES 8 X 34 X 630

HARDWARE SET #36

1 - ROTON HINGE 780-224HD-UL-FF X 83" X CLEAR X ASDS
1 - EXIT DEVICE 99L-F X 996L-R(03) X 299F X 626
1 - RIM CYLINDER 1E72-RP-626 - BRASS CORE
1 - WALL STOP 406 X 630
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40 X 630
1 - SET OF SEAL 5050B

HARDWARE SET #37

2 - ROTON HINGES 780-224HD-UL-FF X 83" X CLEAR X ASDS
2 - EXIT DEVICES 9927L-F X 996L-V(03) X 299F X 626
2 - RIM CYLINDERS 1E72 X RP X 626
2 - CLOSERS 4111-H-CUSH X 689 X WS/MS/TB

2 - KICK PLATES 8 X 40 X 630

HARDWARE SET #38

2 - ROTON HINGES 780-224HD-UL-STUD X 83" X CLEAR X WS/SDS
2 - EXIT DEVICES 9927L-F X 996L-V(03) X 299F X 626
2 - RIM CYLINDERS 1E72 X RP X 626 X BRASS CORES
2 - CLOSERS 4111-CUSH X 689 X WS/MS/TB
2 - KICK PLATES 8 X 40 X 630

HARDWARE SET #39

1 - ROTON HINGE 780-224HD X 83" X CLEAR X ASDS
1 - EXIT DEVICE 99NL X 990NL-R X 299 X 626
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 46
1 - THRESHOLD 425 X 52" X 1/4-20 MS X LA
1 - WEATHERSTRIP A626A 1PC-48" X 2PCS-84" X TEKS
1 - SWEEP C627A X 48" X TEKS

HARDWARE SET #40

1 - ROTON HINGE 780-224HD X 83" X CLEAR X ASDS
1 - EXIT DEVICE 99NL X 990NL-R X 299 X 626
1 - RIM CYLINDER 20-022 X 626
1 - CLOSER 4111-CUSH X 689 X WS/MS/TB
1 - KICK PLATE 8 X 40
1 - THRESHOLD 425 X 46" X 1/4-20 MS X LA
1 - WEATHERSTRIP A626A 1PC-42" X 2PCS-84" X TEKS
1 - SWEEP C627A X 42" X TEKS

HARDWARE SET #41

5 - HINGES TA-2714 4-1/2 X 4-1/2 X 626
1 - ELECTRIC HINGE TA-2714 CC6 4-1/2 X 4-1/2 X 626
1 - ELECTRIC LOCK 45HW-7-DEU-3-H-626
1 - PAIR OF FLUSH BOLTS 555 X 626
1 - DUST-PROOF STRIKE 570 X 626

-- End of Section --