

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Work under this section includes furnishing and the installation of finish hardware specified herein and noted on drawings for a complete and operational system, including any electrified door hardware components and low-speed auto operators.
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Definition: "Finish Hardware" includes items known commercially as finish / security hardware and systems which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.
- B. Extent of finish / security hardware required is indicated on drawings and in Part 3: Hardware Sets. Provide items, articles, materials, operations and methods listed, mentioned or scheduled herein or on the drawings, in quantities as required to complete the project. Provide hardware that functions properly and compliant with required Codes: Fire/Life Safety/ADA. Prior to furnishing the hardware, advise the architect of items that will not operate properly, are improper for conditions, or will not remain permanently anchored.
- C. Types of finish hardware required include, but are not limited to, the following:
 - 1. Butt Hinges
 - 2. Continuous Hinges
 - 3. Lock cylinders and keys
 - 4. Lock and latch sets
 - 5. Exit devices
 - 6. Door Pulls
 - 7. Closers
 - 8. Door trim units
 - 9. Weatherstripping for exterior doors
 - 10. Protection plates
 - 11. Thresholds, Gaskets, and Door Bottoms
 - 12. Key Cabinet
 - 13. Electrified Hardware
 - 14. Coat Hooks at office doors
- D. References
 - 1. NFPA-80- as adopted - Standard for Fire Doors and Windows
 - 2. NFPA-101-as adopted - Life Safety Code
 - 3. NFPA - 70 - National Electric Code
 - 4. ADA - The Americans with Disabilities Act - Title III - Public Accommodations
 - 5. ANSI-A 117.1-American National Standards Institute - Accessible and Usable Buildings and Facilities
 - 6. ANSI-A156.5-American National Standards Institute - Auxiliary Locks and Associated Products
 - 7. NC Building Code as Adopted.
 - 8. Positive Pressure Testing UL10C & UBC7.2
 - 9. UL - Underwriters Laboratories
 - 10. WHI - Warnock Hersey International, Division of Intertek Testing Services
 - 11. State, Local and Federal Codes, National Electrical Building Codes, including the Authority Having Jurisdiction.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Obtain each type of hardware (ie., lock sets / security equipment) from a single manufacturer, although several may be indicated as offering products complying with requirements.
- B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware and installation in the project's vicinity for a period of not less than 5 years. The supplier shall be, or shall employ, an Architectural Hardware Consultant (AHC) who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to the Owner, Architect and the Contractor. The architectural hardware consultant (AHC) shall prepare all hardware and wiring diagrams. This Supplier is responsible for proper coordination of all finished hardware with related sections to insure compatibility of products. The Hardware Supplier shall attend all coordination meetings regarding hardware applications with related trades.
- C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware, which has been tested and listed by UL / WHI or FM for types and sizes of doors required and complies with requirements of door and door frame labels. Provide door seals to meet Positive Pressure Testing UL10C and UBC7 - 2 as required.
- D. Where emergency exit devices are required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL / WHI or FM label on exit devices indicating "Fire Exit Hardware".
- E. Thru bolt door closers at all doors and exit devices – except at FRP doors. The Hardware Supplier shall verify and coordinate proper blocking if provided from the door manufacturer for hardware attachment on doors.
- F. Unless otherwise specified, provide lever handle locksets ADA compliant.
- G. Pre-Installation Meeting: The GC /CM shall initiate and conduct a jobsite meeting with the hardware supplier and the Installer, and all related trades for mechanical and electrical hardware. This meeting shall convene at least one month prior to commencement of the related work, specifically, the electrical rough-in for coordination of electrified hardware applications. All approved shop drawings, wiring diagrams, and schedules shall be made available to all related trades as required for work to be performed. The Owner's representative shall attend all pre-install meetings. One month prior to the installation of the hardware, the hardware supplier shall, with the assistance of the manufacturer's representative, provide review/training to the Installers of the following products: closers, exit devices, locks, and electrified hardware.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical product data for each item of hardware in accordance with Division-1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. Hardware Schedule: Submit copies of the schedule in accordance with Division 1 - "Submittals", General Requirements. Schedule shall be in vertical format, listing each door opening, including: handing, all hardware scheduled for the opening or otherwise required to allow for proper function of door openings as intended, and the finish of the hardware. At doors with door closers or door controls, include degree of door opening. If requested, all submittals (schedules, cut sheets, diagrams) shall be reviewed by the Owner's representative prior to ordering the material. Furnish wiring diagrams for all electrified hardware.
 - 1. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into a vertical format with "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
 - a. Type, style, function, size and finish of each hardware item.
 - b. Name and manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Maintain the same Set/Heading numbering from Part 3 of this section, or reference to the

- Spec Set number in the Heading.
 - e. Reference door numbers from the door/frame schedule in the plan set.
 - f. Explanation of all abbreviations, symbols, codes, etc., contained in schedule.
 - g. Mounting locations for hardware.
 - h. Door and frame sizes and materials.
 - i. Keying information as available.
 - j. One Heading/Set per page
 - k. Operational Description for all specified electrical hardware shall be included with each Heading/Set.
 - C. Submittal Sequence: Submit hardware schedule and wiring diagrams according to the GC's established project schedule, particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames), and electrical rough-in, which is critical in the project construction schedule. Include with schedule the product data, catalog cuts, samples, templates, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.
 - D. Keying Schedule: Coordinate, and prepare as required, the keying schedule after meeting with the Owner to determine the Owner's instructions for keying.
 - E. Samples if Requested: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit any requested samples of type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.
 - F. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location, coordination and installation of hardware.
 - G. Manufacturer's Catalog Cuts: Submit manufacturer's cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.
 - H. Wiring Diagrams: Provide complete wiring diagrams for each opening requiring electrified hardware. Provide an elevation drawing, with each electrified hardware set. Provide a point-to-point diagram prior to the delivery of hardware to job site and another copy to the Owner at time of job completion. All electrical components shall be listed by opening in the hardware submittals. Include an operational description with each diagram.
 - I. Operational Descriptions: Provide a complete operational description of the specified electrified hardware components for each opening, and include the description under the hardware set/heading in the hardware submittal. Operational descriptions shall detail how each electrified component functions within the opening, incorporating all conditions of ingress and egress. Review these descriptions with all related trades at the Pre-Install meetings.
 - J. Elevation Drawings: Provide elevation drawings of electronic hardware and systems identifying locations of the system components with respect to their placement in the door opening. Include the number of wires, with the gauge included, needed at the specific locations. Provide a copy with each hardware schedule submitted for approval. Supply another copy to the Owner upon project completion. Include an operational description with each drawing.
- 1.5 PRODUCT HANDLING
- A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.
 - B. Inventory hardware jointly with the General Contractor, representatives of hardware supplier / hardware installer until each is satisfied that count is correct.
 - C. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

- D. The General Contractor shall provide secure lock-up for hardware and security equipment delivered to the project, but not yet installed. Control handling and installation of hardware items, which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

1.6 SEQUENCING AND SCHEDULING

- A. Deliver all finish hardware to the job site in a timely manner so not to delay progress of other trades.

1.7 WARRANTY

- A. Door closers shall include a thirty (30) year manufacturers' warranty against defects in materials and workmanship.
- B. Exit Devices shall include a three (3) year warranty.
- C. Hinges: Life of Building.
- D. Electrified Hardware shall include a one (1) year warranty.
- E. Other Hardware shall include a three (3) year warranty.

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware are indicated in the Finish Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following:

- B. Manufacturers:

	Hardware Item:	Specified Manufacturer	Designation
1.	Butt Hinges:	Ives	IVE
2.	Continuous Hinges	Ives	IVE
3.	Locksets:	Yale	YAL
4.	Cylinders/Cores	Yale	YAL
5.	Silencers:	Ives	IVE
6.	Stops:	Ives	IVE
7.	Overhead Stops	Glynn-Johnson	GLY
8.	Closers:	LCN	LCN
9.	Thresholds:	Zero	ZER
10.	Gasket/Door Bottoms:	Zero	ZER
11.	Kickplates:	Ives	IVE
12.	Pull/Push Plates:	Ives	IVE
13.	Exit Devices:	Von Duprin	VON
14.	Flush Bolts:	Ives	IVE
15.	Automatic Flush Bolts:	Ives	IVE
16.	Miscellaneous Hardware:	Ives, Glynn-Johnson	IVE/GLY
17.	Key Cabinet	See Spec	
18.	Network Locksets	Schlage Electronics	SCE
19.	Power Supplies Power Transfers	Von Duprin	VON

- C. Provide products as hereafter specified. Substitutions other than those manufacturers listed, must be approved, in writing, via addenda, prior to bid. Procedure for substitutions shall be as outlined in Division 1. No substitutions will be considered after award of contract.

2.2 MATERIALS AND FABRICATION

A. General:

1. Hand of Door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
2. Coordinate door pulls with cylinder lock location to confirm pulls do not interfere with access to lock. Provide offset pulls if required.
3. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
4. Manufacturer's identification will be permitted on rim of lock cylinders only.
5. Finishes:
 - a. 626/652 for all finished metal hardware items except as 630 is otherwise indicated. Door closers to be powder coated to match 652/626. Exit devices shall be US26D with stainless steel touchbars.
6. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware, which has been prepared for self-tapping sheet metal screws, except, as specifically indicated.
7. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
8. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Use thru-bolts for closer and exit devices. Coordinate wood door blocking at all wood doors and all fire-rated wood doors. Provide sleeves for each thru-bolt or use sex screw fasteners.
9. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3 HINGES AND BUTTS

- A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- B. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 1. Steel Hinges: Steel pins.
 2. Non-ferrous Hinges: Stainless steel pins.
 3. Exterior Doors: Non-removable pins.
 4. Out-swing Corridor Doors: Non-removable pins.
 5. Interior Doors: Non-rising pins.
 6. Tips: Flat button and matching plug, finished to match leaves.
 7. Number of hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
 8. **Owner Preferred:**
 - a. **Ives: 5BB1/5BB1HW**
 9. Acceptable Manufacturers:
 - b. McKinney: TB2714/TB2314/TB3786/TB3386
 - c. Stanley: FBB179/199/168/191

- D. Continuous Hinges: Provide concealed, non-handed, full height hinges with interlocking cover and symmetrically template hole pattern made from extruded aluminum. Finish shall be BHMA 628. Field modifications for cutting shall be permitted up to 6" from the bottom.

1. Owner Preferred

- a. Ives: 112HD
2. Acceptable Manufacturers:
- b. Select: SL11HD
- c. Stanley: 661HD

2.4 CYLINDERS AND KEYING

- A. General: The Hardware Supplier shall furnish the keyed permanent cores and keys for the project. All locks/cylinders shall be furnished with keyed temporary construction cores. The construction cores shall utilize a color-coded construction cores system which is not part of the Owner's existing permanent key system. The Hardware Supplier shall be responsible for furnishing/invoicing the GC for the construction cores. The General Contractor, under the supervision of the Owner, shall install permanent cores and return the construction cores to the Hardware Supplier for credit to the GC. The Owner shall assume no responsibility for construction cores, and the construction cores shall not be part of the Owner's material list from the GC. All permanent keyed cores shall be furnished as Yale. Provide permanent keys and cores stamped with the applicable key mark for identifications. These visual key control marks or codes shall not include the actual key cuts: VKC.
- B. The NHCS existing key system is a Yale restricted (patented) grandmaster system which shall be utilized for all project keying requirements. Equip locks and cylinders with Yale factory-keyed cores as specified. All cylinder housings shall accept Yale keyed permanent cores. The Hardware Supplier shall confirm all keying and core requirements with the Owner's representative prior to ordering the cores.
- C. Provide permanent keys and cores stamped with the applicable key mark for identifications. These visual key control marks or codes shall not include the actual key cuts: VKC. All cylinders/locksets shall be furnished with temporary construction keyed cores for the construction period of the project. Furnish five (5) Construction Keys and one (1) control key for the General Contractor's use during project construction. Furnish five (5) each Grandmaster keys. Furnish five (5) each Master keys (per master group). Furnish a total of three (3) change keys per cylinder or keyed alike group. Actual cut keys to be determined by the school district. All keys shall be stamped with key symbols and "Do Not Duplicate".
- D. DO NOT provide any permanent control keys.
- E. Provide one (1) each bitting list to the Owner by registered mail.
- F. Owner Preferred:**
- 1. Yale**

2.5 CYLINDRICAL LOCKS

- A. Locksets shall be as specified: Mortise lockset shall be Series 4000, Grade 1 Operational and Security, UL Listed for 3-hour fire door. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with ANSI curved lip extended to protect frame, finished to match hardware set. Lever rotation shall be in both directions for ease of use, and allow for independent lever rotation. All locks except Yale shall be furnished as "less cylinder". Add Yale cylinders with keyed permanent cores.
- B. Lock Throw: Provide solid stainless steel 1-1/2" deadbolt with 1" minimum throw. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
- C. Provide 3/4" minimum throw on latch bolts.

D. Owner Preferred:

1. Yale 5400 Series x PB

E. Acceptable Manufacturers:

1. Schlage ND Series
2. Corbin-Russwin CL3100 Series

2.6 PULLS/ PUSH PLATES

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through-bolted for matched pairs, but not for single units. Furnish type and size as specified in Hardware Sets.

B. Acceptable Manufacturers:

1. Ives
2. Burns
3. Trimco

2.7 CLOSERS AND DOOR CONTROL DEVICES

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.

B. Closers: All door closers shall be of one manufacturer to provide for proper installation and servicing after installation. All closers shall use high strength cast iron cylinders, forged main arms, and one-piece forged steel pistons. All closers shall be inspected after installation by a factory representative to ensure proper adjustment and operation. A report shall be filed with the architect after said visit has been made. Closer shall carry a manufacturer's minimum 20-year warranty for hydraulic units and 2-year warranty for electrical and/or handicap power assist door closers against manufacturing defects and workmanship. PRV [pressure relief valves] are not acceptable.

C. Parallel Arm Closers: Shall incorporate one piece solid forged steel arms steel stud shoulder bolts, shall be incorporated in regular arms, hold open arms, arms with stop built in, arms with hold open and stop built in. All other closers to have forged steel main arms for strength, and durability. Unless otherwise specified, mount all closers parallel arm.

D. Built-In Stops: Where closers with built-in positive stops are used, the stops shall be of one piece cast malleable iron material with built in springs. Where required, the hold-open assembly handle for these stops shall rotate on ball bearings.

E. All door closers shall pass UL10C positive pressure fire test.

F. Provide closers with adjustable spring power. Size closers to ensure exterior and fire rated doors will consistently close and latch. Size all other door closer to allow for reduced opening force not to exceed 5 lbs.

G. Hydraulic Fluid: All closers, with the exception of interior electronic closers, shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees F. to -30F. without requiring seasonal adjustment of closer speed to properly close the door. Fluid shall be nonflammable.

H. All closers shall have a powder coat finish on closer body, arm, cover and adapter plate. Furnish special rust inhibiting pretreat coating, as specified, for closer body, arm, cover and plates before the powder coat finish.

- I. All door closers shall have full covers and separate adjusting valves for sweep, latch and back-check. Provide all drop plates, shoe supports, templates, etc. to properly mount closers according to manufacturers' recommendations.

J. Owner Preferred:

1. LCN 4040XP/4040XP SCUSH

- K. Acceptable Manufacturers:

- 1. Corbin-Russwin DC8200 A11
- 2. Sargent 281 x EDA/ 281CS

- L. Through bolts shall be used for attachment of closers at all doors.

2.8 EXIT DEVICES

- A. General: All devices shall be of one manufacturer to provide for proper installation and servicing. Devices shall be furnished non-handed and capable of direct field conversion for all available trim functions. All devices shall carry a minimum three-year warranty against manufacturing defects and workmanship. All devices shall be push-through touch pad design as specified. No exposed touch bar fasteners, no exposed cavities when operated.
- B. Furnish all touch-pad type devices with stainless steel touch bars. Plastic parts are not acceptable. Dogging mechanism shall be mechanical hook type with no plastic dogging cams.
- C. Furnish all touch-pad type exit devices with deadlocking latch bolts. Latchbolts shall be moly-coated to reduce friction against the strike.
- D. Furnish all touch-pad exit devices with flush end caps. End caps shall be flush with device housing with no raised edges.
- E. Furnish roller strikes with all rim exit devices.
- F. All removable mullions shall be furnished with key function for removal. Furnish stabilizers similar to Von Duprin 154 with all removable mullions.
- G. Outside Trim: Shall be heavy duty type and fastened by means of concealed welded lugs and thru-bolts from the inside. Trim shall be forged brass with a minimum average thickness on the escutcheon of .130. Plate with trim shall be brass with minimum average thickness of .090 and have forged pulls. Where Lever Handles are specified provide 996 type Break Away Trim. Where outside trim is specified, furnish trim that thru-bolts directly to the exit device center case.
- H. Furnish cylinders with all lockable exit devices.
- I. Furnish required filler plates and shim kits for flush mounting of exit devices on all doors requiring same. Exit devices to be mounted on full-glass doors, shall not have exposed fasteners on the mechanism case.
- J. Springs: Compression type only. Torsion springs are not acceptable.
- K. Electrified Functions: Electric Latch Retraction shall be provided with a continuous duty solenoid, retracting the latch bolt for momentary latch retraction, or may be held retracted for extended periods of time. Electric operated trim device shall be furnished as Fail-Safe. When the power is off, the trim is unlocked for free entry. The trim may then be relocked electrically by applying power.
- L. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position, or as Less Dogging (LD) as specified.

M. Owner Preferred:

1. Von Duprin 99 Series, 996 Series lever trim, 990 Series pull trim

N. Acceptable Manufacturers:

1. Precision 2100 series, 4900 series lever trim, 1700A series pull trim
2. Sargent 80 series, 700 ET series lever trim, 800 MAL pull trim

2.9 DOOR TRIM UNITS

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screws.
- B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.
- C. Fabricate protection plates (armor, kick or mop) not more than 2" less than door width on stop side and not more than 1" less than door width on pull side, x the height indicated.
- D. Metal Plates: Stainless steel, .050" (U.S. 18 ga), bevel 3 edges: top and both sides.
- E. Acceptable Manufacturers:
 1. Ives
 2. Trimco
 3. Burns

2.10 GASKETS, DOOR BOTTOMS

- A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf, except where stated the door manufacturer will provide the weatherstripping. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated. All gaskets for fire label doors shall comply the door manufacturers label approvals. Fire-label wood doors shall be furnished as "Category A" type with the intumescent seal, integral to the door construction.
- B. Sound seal: Provide types as indicated for sound isolation. As indicated in the Door Schedule each door shall receive an automatic door bottom and double row of bulb-type adhesive gasket.
- C. Acceptable Manufacturers:
 1. National Guard 5050
 2. Reese F-797B
 3. Zero 188S

2.11 THRESHOLDS

- A. General: Except as otherwise indicated provide standard aluminum threshold unit of type, size and profile as shown or scheduled.
- B. Provide thresholds that are 1" wider than depth of frame.
- C. Provide gasketed threshold for all exterior doors.
- D. The hardware supplier shall verify all sill conditions and finish floor conditions and coordinate proper threshold as required to insure a smooth transition between threshold and the interior floor.
- E. Acceptable Manufacturers:

1. National Guard 425 / 896S
2. Zero 8655 / 65A
3. Reese S205

2.12 DOOR SILENCERS

- A. All hollow metal frames shall have gray resilient type silencers. Quantity (3) on single doors and quantity (2) on pair of doors.

2.13 COORDINATORS

- A. Furnish type specified in hardware sets.
- B. Acceptable Manufacturers:
 1. Ives: COR x FL
 2. DCI: 600 x filler
 3. Burns: 7600 series x Filler

2.14 FLUSHBOLTS

- A. Furnish type specified in hardware sets.
- B. Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze or stainless steel, with minimum 12" long rod for doors up to 7'-0" in height. Provide longer rods as necessary for doors exceeding 7'-0" in height.
- C. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.
- D. Acceptable Manufacturers:
 1. Ives: FB31P/FB41P/ FB458
 2. DCI: 842/962/780F
 3. Trimco: 3810/3815/3917

2.15 OVERHEAD STOPS

- A. Furnish type specified in hardware sets. Through-bolts shall be used for attachment of overhead holders.
- B. Acceptable Manufacturers:
 1. Glynn Johnson: 90 series
 2. Sargent: 1790 series.
 3. Rixson: 10 series

2.16 WALL STOPS

- A. Furnish a stop or holder for all doors. Furnish floor stops only where specifically indicated. Where wall stops are not applicable, furnish overhead stops. Holder shall not be furnished at fire-rated doors.
- B. Acceptable Manufacturers:
 1. Ives: WS406/407CCV
 2. Trimco: 1270WXCP
 3. DCI: 3211

2.17 KEY CABINET

- A. Furnish one each wall-mount cabinet with a capacity of 1.5 times the number of key sets. Provide the cabinet with at least one hook for each key set, plus additional hooks for 50% expansion. Furnish the cabinet complete with a cam lock, permanent key tags, and change key cards. The Hardware Supplier shall prepare all change key index records, tag all keys and place permanent file keys in the cabinet. Review with the Owner.
- B. Acceptable Manufacturers:
 - 1. Lund Deluxe Series 1200
 - 2. MMF
 - 3. Telkey

2.18 KEY KEEPER

- A. Furnish one each secure storage box for two each building keys for emergency personnel use. This box shall be located per the architect and fire marshal at the exterior of the building. This box shall be approved by the City of Wilmington and by New Hanover County.
- B. Dual Lock Model, Recessed Mount, 1/4" plate steel housing, 5/8" thick steel door with interior gasket seal. Vault and Lock UL listed. Lock has 1/8" dust cover with tamper seal mounting capability. Vault has anti-theft re-locking mechanism with drill resistant hard-plate lock protector.
- C. UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
- D. **Owner Preferred:**
 - 1. **Knox Vault 4400 Series**
- E. Acceptable Manufacturers:
 - 1. Eagle
 - 2. Ramset

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces, which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 09 sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units, which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.
- F. Adjust and reinforce attachment substrate for proper installation and operation:

1. Gaskets: Install jamb-applied gaskets before closers, overhead stops, rim strikes, etc.
 - G. Locate floor stops not more than 4 inches from the wall.
 - H. Verify actual locations of wiring connections before electrified door hardware is installed.
 - I. Examine doors and frames with the hardware installer for compliance with requirements for installation tolerances, labeled fire door assembly, wall and floor construction, and other conditions affecting door performance.
 - J. Existing door/frame conditions: The GC and all related trades shall review the existing conditions prior to ordering and installing any new hardware. Notify the architect of any exceptions. All existing doors scheduled to be re-worked and re-used shall be reviewed with the Finish Hardware Submittal and templates before the doors are prepped for the new hardware and re-hung in the door opening.
 - K. The Hardware Installer shall be responsible for installation of all mechanical and electromechanical hardware items specified in the Hardware Sets, at the end of the section, in accordance with the manufacturer's technical installation guidance, and in addition to all applicable code requirements. Electromechanical hardware items include: electrified hinges, power transfers, network locksets, network exit trim, electrified panic devices.
 - L. The Division 26 Electrical sub-contractor shall make all wiring connections from the electrified hardware to the power source wiring. The Electrical sub-contractor shall install and connect all power supplies to the electrified hardware items. The Electrical sub-contractor shall provide and install all (120VAC) power source wiring as required for the electrified locking and access control hardware, equipment, accessories, and power supplies.
- 3.2 ADJUST AND CLEAN
- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units, which cannot be adjusted to operate freely and smoothly as intended for the application made.
 - B. Clean adjacent surfaces soiled by hardware installation.
 - C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
 - D. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
 - E. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative[s] of the Finish Hardware manufacturer[s], shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items, which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of any current or predictable problems (of substantial nature) in the performance of the hardware and furnish copy to Owners Agent / Representative.
- 3.3 HARDWARE SETS

HARDWARE GROUP NO. 01

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	AU 5402LN	626	YAL
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 02

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 03

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 04

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	FIRE EXIT HARDWARE	99-EO-F	626	VON
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
		PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM			

1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
			CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED		
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	566BK-223	BK	ZER
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 05

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 06

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-99-EO	626	VON
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	RAMP	R150	689	NGP
1	EA	THRESHOLD	566BK-223	BK	ZER
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 07

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	ELEC PANIC HARDWARE	RX-LC-99-EO	626	VON
1	EA	ELEC EXIT DEVICE TRIM	AD-400-993R-70-MT-RHO-JDYA6 4B BATTERY OPERATED	626	SCE

1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	THRESHOLD	566BK-223	BK	ZER
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

COORDINATE WITH SECURITY SYSTEMS.

DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER WILL MOMENTARILY UNLOCK PANIC HARDWARE TRIM AND ALLOW ENTRY.

DOOR IS ALWAYS AVAILABLE FOR FREE EGRESS.

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 08

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4040XP SCUSH INSTALL ON INACTIVE LEAF INSTALL ON ACTIVE LEAF	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 10

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 11

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	DOOR EDGE	KE31-1	630	TRI
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 12

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	OH STOP	90S	630	GLY
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	DOOR EDGE	KE31-1	630	TRI
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 13

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	DOOR EDGE	KE31-1	630	TRI
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 14

EACH TO HAVE:

Wrightsville Beach Elementary Addition

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 15

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	DOOR EDGE	KE31-1	630	TRI
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 16

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CYLINDRICAL DEADBOLT	D111	626	YAL
	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8302 6" 6" X 16"	630	IVE
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	FLOOR STOP/HOLDER	FS496	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 17

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE

Wrightsville Beach Elementary Addition

1	EA	CYLINDRICAL DEADBOLT	D111	626	YAL
	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8302 6" 6" X 16"	630	IVE
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP/HOLDER	FS495	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 18

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	AU 5402LN	626	YAL
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 19

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	THRESHOLD	566BK-223	BK	ZER

HARDWARE GROUP NO. 20

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE

1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	DOOR BOTTOM	364AA	AA	ZER
1	EA	THRESHOLD	655A-223	A	ZER
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

DOOR CONTACT TIED TO ACCESS CONTROL SYSTEM FOR MONITORING.

HARDWARE GROUP NO. 21

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	REMOVABLE MULLION	KR4954 (PAINT MULLION TO MATCH STOREFRONT SYSTEM)	689	VON
2	EA	PANIC HARDWARE	LD-99-EO	626	VON
1	EA	YALE MORTISE CYLINDER	AS REQUIRED		
1	EA	YALE PERMANENT CORE	AS REQUIRED		
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30 PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM	689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED	689	LCN
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	566BK-223	BK	ZER
2	EA	DOOR CONTACT	679-05HM	BLK	SCE

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 22

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-99-EO	626	VON
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30 PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM	689	LCN

1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
			CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED		
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	566BK-223	BK	ZER

REUSE EXISTING AD-400 EXIT TRIM.
 COORDINATE WITH SECURITY SYSTEMS.
 DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER WILL
 MOMENTARILY UNLOCK PANIC HARDWARE TRIM AND ALLOW ENTRY.
 DOOR IS ALWAYS AVAILABLE FOR FREE EGRESS.

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 23

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	ELEC FIRE EXIT HARDWARE	RX-LC-99-EO-F-24VDC	626	VON
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
			PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM		
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
			CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED		
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	8655A	A	ZER

REUSE EXISTING AD-400 EXIT TRIM.
 COORDINATE WITH SECURITY SYSTEMS.
 DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER WILL
 MOMENTARILY UNLOCK PANIC HARDWARE TRIM AND ALLOW ENTRY.
 DOOR IS ALWAYS AVAILABLE FOR FREE EGRESS.
 DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 24

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-99-NL-OP-110MD	626	VON
	EA	YALE RIM CYLINDER	AS REQUIRED		

1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	ELECTRIC STRIKE	6111 FSE	630	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" L	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
			PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM		
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
			CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED		
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	566BK-223	BK	ZER
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS	LGR	SCE
			COORDINATE POWER SUPPLY REQUIREMENT WITH SECURITY PROVIDER		
	EA	DESK MOUNT BUTTON	BY OTHERS		
	EA	AIPHONE (BY OTHERS)	AUDIO/VIDEO INTERCOM SYSTEM		AIP

COORDINATE WITH ELECTRICAL AND SECURITY SYSTEMS. DOOR NORMALLY CLOSED AND LOCKED.

RECEPTION TO REMOTELY UNLOCK DOOR TO ALLOW ENTRY. WHEN DESK BUTTON IS PRESSED, ELECTRIC STRIKE WILL MOMENTARILY UNLOCK AND VISITOR WILL BE ABLE TO OPEN DOOR.

DESK BUTTON INTEGRATED INTO INTERCOM/DESK STATION.

DOOR CONTACT TIED TO ACCESS CONTROL SYSTEM FOR MONITORING.

HARDWARE GROUP NO. 25

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	REMOVABLE MULLION	KR4954	689	VON
			(PAINT MULLION TO MATCH STOREFRONT SYSTEM)		
2	EA	PANIC HARDWARE	LD-99-EO	626	VON
1	EA	YALE MORTISE CYLINDER	AS REQUIRED		
2	EA	YALE PERMANENT CORE	AS REQUIRED		
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
			PROVIDES ANCHORAGE FOR 5TH SCREW USED W/CUSH ARM		
2	EA	BLADE STOP SPACER	4040XP-61	689	LCN
			CHECK FRAME DETAILS AND REMOVE BLADE STOP SPACER IF BLADE STOP IS NOT USED		
1	SET	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	THRESHOLD	566BK-223	BK	ZER

REUSE EXISTING AD-400 EXIT TRIM.
 COORDINATE WITH SECURITY SYSTEMS.
 DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER WILL
 MOMENTARILY UNLOCK PANIC HARDWARE TRIM AND ALLOW ENTRY.
 DOOR IS ALWAYS AVAILABLE FOR FREE EGRESS.
 DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 26

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	DOOR EDGE	KE31-1	630	TRI
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 27

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
2	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	THRESHOLD	566BK-223	BK	ZER
2	EA	DOOR CONTACT	679-05HM	BLK	SCE

DOOR CONTACT TIED TO ACCESS CONTROL FOR MONITORING.

HARDWARE GROUP NO. 28

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	99-L-2SI-06	626	VON
2	EA	RIM CYL THUMBTURN	XB11-979	626	SCH

1	EA	YALE MORTISE CYLINDER	AS REQUIRED		
2	EA	YALE RIM CYLINDER	AS REQUIRED		
3	EA	YALE PERMANENT CORE	AS REQUIRED		
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER

HARDWARE GROUP NO. 29

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY LOCK	AU 5407LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 30

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	AU 5402LN	626	YAL
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	COAT AND HAT HOOK	582	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 31

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PRIVACY LOCK	AU 5402LN	626	YAL
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	COAT AND HAT HOOK	582	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 32

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	ELECTRIC STRIKE	6400 FSE	630	VON
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS	LGR	SCE
			COORDINATE POWER SUPPLY REQUIREMENT WITH SECURITY PROVIDER		
1	EA	DESK MOUNT BUTTON	BY OTHERS		

COORDINATE WITH ELECTRICAL AND SECURITY SYSTEMS. DOOR NORMALLY CLOSED AND LOCKED.

RECEPTION TO REMOTELY UNLOCK DOOR TO ALLOW VISITOR TO ENTER CORRIDOR FROM RECEPTION. WHEN DESK BUTTON IS PRESSED, ELECTRIC STRIKE WILL MOMENTARILY UNLOCK AND VISITOR WILL BE ABLE TO OPEN DOOR.

DESK BUTTON INTEGRATED INTO INTERCOM/DESK STATION. DOOR CONTACT TIED TO ACCESS CONTROL SYSTEM FOR MONITORING.

HARDWARE GROUP NO. 33

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT HARDWARE	99-L-BE-F-06	626	VON
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	MOP PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	188SBK PSA	BK	ZER

HARDWARE GROUP NO. 34

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	PASSAGE LOCK	AU 5401LN	626	YAL

BALANCE OF HARDWARE EXISTING TO REMAIN.

HARDWARE GROUP NO. 35

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	ENTRY LOCK	AU 5407LN	626	YAL

EXISTING TO REMAIN.

HARDWARE GROUP NO. 36

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	PRIVACY LOCK	AU 5402LN	626	YAL

EXISTING TO REMAIN.

HARDWARE GROUP NO. 38

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	AU 5405LN	626	YAL
1	EA	YALE PERMANENT CORE	AS REQUIRED		
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

END OF SECTION 087100

Door/Hardware Index

Mark #	HWSet #
100A	24
100B	32
100C	13
100D	14
100E	01
101A	22
101B	21
102A	29
103A	11
104A	12
200A	12
200B	35
200C	36
201A	12
201B	18
202A	12
202B	34
202C	36
203A	12
203B	18
204A	12
204B	18
205A	11
206A	04
206B	23
207A	12
2101A	02
2101B	05
2101C	03
2200A	15
2201A	26
2202A	26
2203A	26
2204A	26
2205A	11
2205B	30
2205C	30
2206A	26
2208A	26
2210A	26
2211A	26
2212A	26
2213A	11

Mark #	HWSet #
2215A	33
2215B	33
300A	28
300B	06
300C	07
301A	08
302A	16
302B	17
302C	35
302D	35
302E	20
302F	36
303A	31
304A	30
C1A	10
C2A	14
E1A	14
E2A	14
H2A	25
H3A	25
R1A	19
S1A	27
S2A	08
T1A	38