SECTION 08710

FINISH HARDWARE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Door Hardware for wood and hollow metal doors
   2. Entrance door hardware.

B. Related Sections:
   1. Section 06200 – Finish Carpentry: Finish Hardware Installation.
   2. Section 08110 – Steel Doors and Frames.
   3. Section 08117 – Pre-Finished Steel Door Frames.
   4. Section 08211 – Flush Wood Doors.
   5. Section 08410 – Aluminum Storefront/Curtain Wall

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.
   1. Windows.
   2. Cabinets, including open wall shelving and locks.
   3. Signs.
   4. Toilet accessories, including grab bars.
   5. Installation.
   6. Rough hardware.
   7. Access doors and panels.
   8. Corner Guards.
   9. Steel railing, gates and supports.

1.02 REFERENCES

A. Use date of standard in effect as of Bid Date.

B. American National Standards Institute – ANSI 156.18 – Materials and Finishes.

C. ANSI A117.1 – Specifications for making buildings and facilities usable by physically handicapped people.

D. ADA – Americans With Disabilities Act of 1990.

E. BHMA – Builders Hardware Manufacturers Association.

F. DHI – Door and Hardware Institute.

G. NFPA – National Fire Protection Association.
   1. NFPA 80 – Fire Doors and Windows.
   2. NFPA 101 – Life Safety Code.
   3. NFPA 105 – Smoke and Draft Control Door Assemblies.
   4. NFPA 252 – Fire Tests of Door Assemblies.

H. UL – Underwriters Laboratories.
   1. UL 10C – Fire Tests of Door Assemblies (Positive Pressure).
   2. UL 305 – Panic Hardware.

I. WHI – Warnock Hersey Incorporated.

J. State of California Building Code.

K. Local applicable codes, e.g. municipal security codes, etc.

L. SDI – Steel Door Institute.

M. WDI – Wood Door Institute.

N. AWI – Architectural Woodwork Institute.

O. NAAM – National Association of Architectural Metal Manufacturers.

1.03 SUBMITTALS & SUBSTITUTIONS

A. See Section 01350 – Submittals, for submittal procedures.

B. Organize vertically formatted schedule into "Hardware Sets" with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:
   1. Type, style, function, size, quantity and finish of hardware items. Use BHMA Finish codes per ANSI A156-18.
   2. Name, part number and manufacturer of each item.
   3. Fastenings and other pertinent information.
   4. Location of hardware set coordinated with floor plans and door schedule.
   5. Explanation of abbreviations, symbols, and codes contained in schedule.
   6. Mounting locations for hardware.
   7. Door and frame sizes, materials and degrees of swing.
   8. Catalog cuts.

C. Bid and submit manufacturer's updated/improved item if scheduled item is discontinued.

D. Make substitution requests in accordance with Section 01640 – Substitutions and Product Options. Include product data and indicate benefit to the Project. Furnish operating samples on request.
   1. Items listed with no substitute manufacturers have been requested by Owner to meet existing standard.

E. Furnish as-built/as-installed schedule with closeout documents manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.04 QUALITY ASSURANCE

A. Qualifications:
   1. Hardware Supplier: Direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course work for project hardware consultant to Owner, Architect and Contractor.
      a. Responsible for detailing, scheduling and ordering of finish hardware.

B. Hardware: New, free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.

C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.

D. Fire-Rated Openings: In compliance with NFPA 80. Hardware UL10C/UBC-7-2 (positive pressure) compliant for given type/size opening and degree of label. Provide proper latching hardware, non-flaming door closers, approved-bearing hinges, plus resilient and required intumescent seals. Furnish openings complete.

E. Pre-Installation Meetings: Initiate and conduct with supplier, installer and related trades, coordinate materials and techniques, and sequence complex hardware items and systems installation. Convene at least one week prior to commencement of related work.

1.05 DELIVERY, STORAGE AND HANDLING

A. Delivery: Coordinate delivery to appropriate location (shop or field).

B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage: Provide locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, etc.

1.06 PRODUCT CONDITIONS

A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect's approval.

1.07 SEQUENCING AND COORDINATION

A. Coordinate with concrete.

B. Reinforce walls.

C. Coordinate finish floor materials and floor-mounted hardware.

D. Furnish manufacturer templates to door and frame fabricators.

E. Use hardware consultant to check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
   1. Confirm that door manufacturers furnish necessary UBC-7-2 compliant seal packages.

1.08 WARRANTY

A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' warranties:
   1. Closers: Ten years mechanical.
   2. Exit Devices: Three years.
   3. Hinges: Life of Building.
   4. Other Hardware: Two years.

1.09 COMMISSIONING

A. Test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.

B. Test hardware interfaced with fire/life-safety system for proper operation and release.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Listed acceptable alternate manufacturers: Submit for review products with equivalent function and features of scheduled products.

ITEM	MANUFACTURER	ACCEPTABLE SUB
Hinges	(IVE) Ives	Bommer, Stanley, Hager
Key System	(ASA) ASSA	Owner's Standard
Locksets	(SCH) Schlage	Owner's Standard
Cylinders	(ASA) ASSA	Owner's Standard
Exit Devices	(VON) Von Duprin	Owner's Standard
Closers	(LCN) LCN	Owner's Standard
Flush Bolts	(IVE) Ives	Hager, Trimco
Silencers	(IVE) Ives	Hager, Trimco
Pull Plates	(RKY) Rocky Mountain	
Door Stops	(IVE) Ives	Rockwood, Hager
Thresholds	(NGP) National Guard Prod.	Reese, Zero, Pemko
Seals & Bottoms	(NGP) National Guard Prod.	Reese, Zero, Pemko

B. Provide hardware items required to complete the work in accordance with these specifications and manufacturers' instructions.
   1. Include items inadvertently omitted from this specification. Note these items in submittal for review.
   2. Where scheduled item is not obsolete, bid and furnish manufacturer's updated item at no additional cost to the project.

2.02 HANGING MEANS

A. Conventional Hinges: Hinge open widths minimum, but of sufficient throw to permit maximum door swing. Steel or stainless steel pins and concealed bearings.
   1. Three hinges per leaf to 7 feet, 6-inch height. Add one for each additional 30 inches in height, or any fraction thereof.
   2. Extra heavy weight hinges on doors over 3 feet, 5 inches in width.
   3. Out-swinging Exterior Doors: With non-removable (NRP) pins.
   4. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.
   5. Provide shims and shimming instructions for proper door adjustment.

2.03 LOCKSETS, LATCHSETS, DEADBOLTS

A. Mortise Locksets and Latchsets: As scheduled.
   1. Chassis: Cold-rolled steel, handing field-changeable without disassembly.
   2. Latchbolts: 3/4-inch throw stainless steel anti-friction type.
   3. Lever Trim: Though-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tub design unacceptable.
      a. Spindles: Security design independent break-away. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
   4. Thumbturns: Accessible design not requiring pinching or twisting motions to operate.
   5. Deadbolts: Stainless steel 1-inch throw.
   6. Electric Operation: Manufacturer-installed continuous duty solenoid.
   7. Strikes: 16-gauge curved steel, bronze or brass with 1-inch deep box construction, lips of sufficient length to clear trim and protect clothing.

8. Scheduled Lock Series and Design: Schlage L Series, 03A design.
9. Certifications:
   a. ANSI A 156.13, 1994, Grade 1 Operational, Grade 1 Security.
   b. ANSI/ASTM F476-84 Grade 31 UL Listed.

2.04 EXIT DEVICES/PANIC HARDWARD

A. General Features:
1. Independent lab-tested 1,000,000 cycles.
2. Push-through touch pad design. No exposed touch bar fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.
3. 3/4-inch throw deadlocking latchbolts.
4. No exposed screws to show through glass doors.
5. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.
6. Releasable with 32 lb. maximum pressure under 250 lb. load to the door.

B. Specific Features:
1. Non-fire Rated Devices: Cylinder dogging.
2. Lever Trim: Breakaway type, forged brass or bronze escutcheon minimum .130-inch thickness, match lockset lever design.
3. Fire-labeled Devices: UL label indicating "Fire Exit Hardware." Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.

2.05 CLOSERS

A. General: One manufacturer for closer units throughout the work, including surface closers and high security closers.

B. Surface Closers: 4040/4010
1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
2. ISO 2000 certified. Units stamped with date-of-manufacture code.
3. Independent lab-tested 8,000,000 cycles.
4. Thru-bolts at wood doors unless doors are provided with closer blocking. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
5. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
6. Opening Pressure: Exterior doors 8.5 lb., interior doors 5 lb., labeled fire doors 15 lb.
7. Separate adjusting valves for closing speed, latching speed and back-check, fourth valve for delayed action where scheduled.
8. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
9. Exterior Door Closers: Tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
10. Exterior doors do not require seasonal adjustment in temperatures from 120 degrees F to -30 degrees F, furnish data on request.
11. Non-flaming fluid will not fuel door or floor covering fires.

2.06 OTHER HARDWARE

A. Door Stops: Provide stops to protect walls, casework or other hardware.

1. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.

B. Seals: Finished to match adjacent frame color. Resilient seal material: solid high-grade neoprene. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material's thickness and durability. Proposed substitutions: submit for approval.
   1. Solid Neoprene: MIL Spec. R6855-Cl III, Grade 40.
   2. Non-corroding fasteners at in-swinging exterior doors.
   3. Fire-rated Doors, Resilient Seals: UL10C/UBC-7-2 compliant. Coordinate with selected door manufacturers and selected frame manufacturer's requirements. Where rigid housed resilient seals are scheduled in this section and the selected door manufacturer only requires an adhesive mounted resilient seal, furnish rigid housed seal at minimum, or both the rigid housed seal and the adhesive applied seal if necessary to fulfill door manufacturer's requirement.
   4. Fire-rated Doors, Intumescent Seals: Furnish fire-labeled opening assembly complete and in full compliance with UL10C/UBC-7-2. Furnished by selected door manufacturer, these seals vary in requirement by door type and door manufacture. Careful coordination required.

C. Thresholds: As scheduled and per details. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.
   1. Exteriors: Set in full bed of butyl rubber or polyisobutylene mastic sealant complying with requirements in Division 7 "Thermal and Moisture Protection." Non-ferrous 1/4-inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
   2. Sound Control Openings: Set in bed of mastic sealant.

D. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

E. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

2.07 FINISH

A. Generally BHMA 626 Dull Chrome.
   1. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

B. Door Closers: Factory powder coated to match other hardware, unless otherwise noted.

C. Aluminum Items: Match predominant adjacent material. Seals to coordinate with frame color.

2.08 KEYING REQUIREMENTS

A. Key System: Furnish cylinders in ASSA restricted keyway that will meet County of Orange Locksmith specifications and use County of Orange-owned sidebars in conjunction with hardware specified.

B. Establish meeting with County of Orange Locksmith for keying instructions.

C. Furnish the following:
   1. 10 Keys for each KD lock.
   2. 10 Keys for each KA group.
   3. 10 Master keys for each group.
   4. 150 Grandmaster keys.
   5. 10 Great grand master keys.
   6. 300 Key blanks.

D. All permanent cylinders to be delivered direct to general contractor for installation.

E. All permanent keys to be delivered direct to County of Orange Locksmith.

F. Furnish temporary cylinders keyed alike at all exterior doors during construction.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

A. Factory trained, certified, and carries a factory-issued card certifying that person as a "Certified Installer." Alternative: Can demonstrate suitably equivalent competence and experience.

3.02 PREPARATION

A. Ensure that walls and frames are square and plumb before hardware installation.

B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
   1. Notify Architect of any code conflicts before ordering material.

3.03 INSTALLATION

A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation.
   1. Gaskets: Install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

B. Locate floor stops not more than 4 inches from the wall.

C. Drill pilot holes for fasteners in wood doors and/or frames.

3.04 ADJUSTING

A. Adjust and check for proper operation and function. Replace units which cannot be adjusted to operate freely and smoothly.
   1. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to Owner's satisfaction.

B. Inspection: Use hardware supplier. Include suppliers with closeout documents.

C. Follow-up Inspection: Installer to provide letter of agreement to Owner that approximately six months after substantial completion, installer will visit Project with representatives of the manufacturers of the locking devices and door closers to accomplish following:

1. Re-adjust hardware.
2. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner's personnel.
3. Identify items that have deteriorated or ailed.
4. Submit written report identifying problems and likely future problems.

3.05 DEMONSTRATION

A. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.06 PROTECTION/CLEANING

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.07 SCHEDULE OF FINISH HARDWARE

A. See door schedule in drawings for hardware set assignments.

B. Manufacturers and their abbreviations used in the schedule:

IVE	H.B. Ives
LCN	LCN Closers
NGP	National Guard Products
SCH	Schlage Lock Company
VON	Von Duprin

C. See attached for Finish Hardware Sets.

SPECWORKS # 90841-B7A959D38

HW SET: 01

1	SET	PIVOT SET	7212	626	IVE
1	EA	PIVOT	7215 INT	626	IVE
1	EA	1 PT. DEADLOCK	MS1851S X 4089 X MS4043 X 4002 X 4066	628	ADA
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
2	SET	OFFSET DOOR PULL	8190-0-M MOUNTING	630	IVE
1	EA	CONCEALED CLOSER	2030 H BUMPER	689	LCN
1	SET	THRESHOLD	8167 X 8137 MS&A OR AS DETAILED -1-113A-1-113B	AL	NGP
1	EA	THRESHOLD	321 MS&A OR AS DETAILED	AL	NGP

DOOR SEALS BY DOOR MFG.

HW SET: 02

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 03A	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	EA	CARPET EDGE	417 MS&A OR AS DETAILED	AL	NGP
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 03

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	SURFACE CLOSER	4041 X HO	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	427E MS&A OR AS DETAILED	AL	NGP

HW SET: 04

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY SET	L9040 03A L583-363	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 04-A

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	IND.PRIVACY SET	L9040 03A L583-363 X L583-375	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 05

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	EA	CARPET DIVIDER	414-75 MS&A OR AS DETAILED	AL	NGP
3	EA	SILENCER	SR64	GRY	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 06

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 03A	626	SCH
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	EA	CARPET DIVIDER	414-75 MS&A OR AS DETAILED	AL	NGP
3	EA	SILENCER	SR64	GRY	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 07

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	EA	CARPET EDGE	417 MS&A OR AS DETAILED	AL	NGP
3	EA	SILENCER	SR64	GRY	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 08

3	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	SURFACE CLOSER	P4041 X HO	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	FLOOR STOP	FS441	626	IVE
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	321 MS&A OR AS DETAILED	AL	NGP

HW SET: 09

6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB358	626	IVE
1	EA	DUST PROOF STRIKE	DP1 / DP2 AS REQ.	626	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	ASTRAGAL	158SA	AL	NGP
1	EA	SURFACE CLOSER	4041	689	LCN
2	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
4	EA	SILENCER	SR64	GRY	IVE

HW SET: 10

3	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	LV9080L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	DOOR HOLDER	PAH60	689	LCN
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	SET	THRESHOLD	8167 X 8137 MS&A OR AS DETAILED -1-129	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	427E MS&A OR AS DETAILED	AL	NGP
1	EA	LOCK GUARD	LG12	630	IVE

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 10-A

3	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	98L E996L X 03	626	VON
1	EA	RIM CYLINDER	TWIN MAX 8851HV - RESTRICTED KEYWAY	626	ASA
1	EA	SURFACE CLOSER	P4041 X HO	689	LCN
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	SET	THRESHOLD	8167 X 8137 MS&A OR AS DETAILED -1-129	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	427E MS&A OR AS DETAILED	AL	NGP

FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 11

2	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	ELECTRIC HINGE	3CB1 4.5 X 4.5 TW8	652	IVE
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	EL STOREROOM LOCK	RX-L9080LEL 03A	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	427E MS&A OR AS DETAILED	AL	NGP

CARD READER BY OTHERS. FURNISH 4 HINGES AT 8'0" HIGH DOORS

HW SET: 12

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE DEADBOLT	L9463L	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	PUSH PLATE	8200 8" X 16"	630	IVE
1	EA	PULL PLATE	8302-6 4" X 16" "G" MOUNTING	630	IVE
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	SET	THRESHOLD	8167 X 8137 MS&A OR AS DETAILED	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP

HW SET: 13

2	SET	PIVOT SET	7212	626	IVE
2	EA	PIVOT	7215 INT	626	IVE
1	EA	MULLION	KR4954 X 154	689	VON
1	EA	PANIC HARDWARE	CD35A-EO	626	VON
1	EA	PANIC HARDWARE	CD35A-NL-OP	626	VON
3	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	RIM CYLINDER	TWIN MAX 8851HV - RESTRICTED KEYWAY	626	ASA
2	SET	OFFSET DOOR PULL	8190-0-N MOUNTING	630	IVE
2	EA	CONCEALED CLOSER	2030 H BUMPER	689	LCN
1	SET	THRESHOLD	8167 X 8137 MS&A OR AS DETAILED	AL	NGP

DOOR SEALS BY DOOR MFG.

HW SET: 14

2	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	ELECTRIC HINGE	3CB1 4.5 X 4.5 TW8	652	IVE
1	EA	PANIC HARDWARE	CX9875L 996L X 03 - DELAYED EGRESS	626	VON
2	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	SURFACE CLOSER	4041 CUSH	689	LCN
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	321 MS&A OR AS DETAILED	AL	NGP
1	EA	POWER SUPPLY	PS873 - LOCATE PER ARCHITECT	GRY	VON

HW SET: 15

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE DEADBOLT	L9463L	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	PUSH PLATE	8200 8" X 16"	630	IVE
1	EA	PULL PLATE	8302-6 4" X 16" "F" MOUNTING	630	IVE
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 16

4	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	SURFACE CLOSER	P4041 X HO	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 17

4	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 03A	626	SCH
1	EA	SURFACE CLOSER	4000T	689	LCN
1	EA	MAGNETIC HOLD-OPEN	SEM 7850	AL	LCN
1	SET	DOOR SEALS	5050B	BRN	NGP

HW SET: 18

8	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
2	EA	MANUAL FLUSH BOLT	FB358	626	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY	626	ASA
1	EA	ASTRAGAL	158SA	AL	NGP
2	EA	SURFACE CLOSER	P4041 X HO	689	LCN
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
2	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	321 MS&A OR AS DETAILED	AL	NGP

HW SET: 19

4	EA	HINGE	3CB1 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	98EO	626	VON
1	EA	SURFACE CLOSER	P4041	689	LCN
1	SET	DOOR SEALS	160SA HEAD & JAMBS X S.S. SCREWS	AL	NGP
1	EA	DOOR SWEEP	A605A - S.S. SCREWS 1/2" FROM DOOR EDGE	AL	NGP
1	EA	THRESHOLD	427E MS&A OR AS DETAILED	AL	NGP

HW SET: 20

4	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PANIC HARDWARE	98L-F-BE 996L-BE X 03	626	VON
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	DOME STOP	FS438 OR AS REQ.	626	IVE
1	SET	DOOR SEALS	5050B	BRN	NGP

HW SET: 21

1	EA	PADLOCK	TWIN MAX 88190B- RESTRICTED KEYWAY BALANCE OF HARDWARE BY DOOR MANUFACTURER	626	ASA

HW SET: 22

1	EA	MORT. CYLINDER	TWIN MAX 8851-6- RESTRICTED KEYWAY BALANCE OF HARDWARE BY GATE MANUFACTURER	626	ASA

HW SET: MISC

6	EA	PADLOCK	TWIN MAX 88190B- RESTRICTED KEYWAY	626	ASA

FOR ROOF HATCHES AND GATES