
**SECTION 08 1213
HOLLOW METAL FRAMES****PART 1 GENERAL****1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Interior hollow-metal frames.

1.03 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.04 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.05 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, fire-resistance ratings, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each frame type.
 - 2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 3. Locations of reinforcement and preparations for hardware.
 - 4. Details of each different wall opening condition.
 - 5. Details of anchorages, joints, field splices, and connections.
 - 6. Details of accessories.
- C. Samples for Verification:
 - 1. Fabrication: Prepare Samples to demonstrate compliance with requirements for quality of materials and construction. Show profile, corner joint, floor and wall anchors, and silencers.
- D. Product Schedule: For hollow-metal frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.06 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of fire-rated hollow-metal frame assembly for tests performed by a qualified testing agency indicating compliance with performance requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.
 - B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
-

-
- C. Store hollow-metal frames vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Ceco Door.
- B. Curries Company.
- C. National Custom Hollow Metal Doors & Frames.

2.02 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated on Drawings, based on testing at positive pressure according to NFPA 252 or UL 10C.

2.03 STEEL FRAMES

- A. Construct hollow-metal frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Interior Frames: SDI A250.8, Level 2.
 - 1. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) (nominal 16 gauge).
 - 2. Construction: Full profile welded.
 - 3. Exposed Finish: Shop primer and field painted. Color to be selected by Owner.

2.04 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 - 2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
 - 3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.
- B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.
- C. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

2.05 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
 - B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
 - C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
 - D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
 - E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
 - F. Glazing: Comply with requirements in Section 088000 "Glazing."
-

2.06 FABRICATION

- A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 - 1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
- B. Hardware Preparation: Factory prepare hollow-metal frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with BHMA A156.115 for preparing hollow-metal frames for hardware.

2.07 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.02 INSTALLATION

- A. General: Install hollow-metal frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions. Comply with SDI A250.11.
- B. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - 1. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - 2. Install frames with removable stops located on secure side of opening.
- C. Fire-Rated Openings: Install frames according to NFPA 80.
- D. Floor Anchors: Secure with postinstalled expansion anchors.
- E. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
- F. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.

2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.03 CLEANING AND TOUCHUP

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 08 1213

**SECTION 08 1416
FLUSH WOOD DOORS****PART 1 GENERAL****1.01 RELATED DOCUMENTS****1.02 DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.****1.03 SUMMARY****1.04 SECTION INCLUDES:**

- A. Solid-core doors with wood-veneer faces.
- B. Factory finishing flush wood doors.
- C. Factory fitting flush wood doors to frames and factory machining for hardware.

1.05 ACTION SUBMITTALS**1.06 PRODUCT DATA: FOR EACH TYPE OF DOOR. INCLUDE DETAILS OF CORE AND EDGE CONSTRUCTION AND TRIM FOR OPENINGS. INCLUDE FACTORY-FINISHING SPECIFICATIONS.****1.07 SHOP DRAWINGS: INDICATE LOCATION, SIZE, AND HAND OF EACH DOOR; ELEVATION OF EACH KIND OF DOOR; CONSTRUCTION DETAILS NOT COVERED IN PRODUCT DATA; AND THE FOLLOWING:**

- A. Dimensions and locations of blocking.
- B. Dimensions and locations of mortises and holes for hardware.
- C. Dimensions and locations of cutouts.
- D. Undercuts.
- E. Requirements for veneer matching.
- F. Doors to be factory finished and finish requirements.
- G. Fire-protection ratings for fire-rated doors.

1.08 SAMPLES FOR INITIAL SELECTION: FOR FACTORY-FINISHED DOORS.**1.09 SAMPLES FOR VERIFICATION:**

- A. Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.

1.10 INFORMATIONAL SUBMITTALS**1.11 SAMPLE WARRANTY: FOR SPECIAL WARRANTY.****1.12 DELIVERY, STORAGE, AND HANDLING****1.13 COMPLY WITH REQUIREMENTS OF REFERENCED STANDARD AND MANUFACTURER'S WRITTEN INSTRUCTIONS.****1.14 PACKAGE DOORS INDIVIDUALLY IN PLASTIC BAGS OR CARDBOARD CARTONS.****1.15 MARK EACH DOOR ON BOTTOM RAIL WITH OPENING NUMBER USED ON SHOP DRAWINGS.****1.16 FIELD CONDITIONS****1.17 ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL DOORS UNTIL SPACES ARE ENCLOSED AND WEATHERTIGHT, WET WORK IN SPACES IS COMPLETE AND DRY, AND HVAC SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE BETWEEN 60 AND 90 DEG F (16 AND 32 DEG C) AND RELATIVE HUMIDITY BETWEEN 25 AND 55 PERCENT DURING REMAINDER OF CONSTRUCTION PERIOD.****1.18 WARRANTY****1.19 A. SPECIAL WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE DOORS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.**

- A. Failures include, but are not limited to, the following:
 - 1. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
 - 2. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.
- B. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
- C. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 PRODUCTS**2.01 MANUFACTURERS****2.02 MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:**

- A. Algoma Hardwoods, Inc.
- B. Eggers Industries.
- C. Marshfield Door Systems, Inc. Signature Series – Basis of Design

2.03 FLUSH WOOD DOORS, GENERAL**2.04 QUALITY STANDARD: IN ADDITION TO REQUIREMENTS SPECIFIED, COMPLY WITH WDMA I.S.1-A, "ARCHITECTURAL WOOD FLUSH DOORS."****2.05 WDMA I.S.1-A PERFORMANCE GRADE: EXTRA HEAVY DUTY.****2.06 FIRE-RATED WOOD DOORS: DOORS COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A QUALIFIED TESTING AGENCY, FOR FIRE-PROTECTION RATINGS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C.**

- A. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 - B. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
-

2.07 SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES: LISTED AND LABELED FOR SMOKE AND DRAFT CONTROL, BASED ON TESTING ACCORDING TO UL 1784.**2.08 PARTICLEBOARD-CORE DOORS:**

- A. Particleboard: ANSI A208.1, Grade LD-2.

2.09 MINERAL-CORE DOORS:

- A. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
- B. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
- C. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - 1. Screw-Holding Capability: 475 lbf (2110 N) per WDMA T.M.-10.

2.10 VENEER-FACED DOORS FOR TRANSPARENT FINISH**2.11 INTERIOR SOLID-CORE DOORS:**

- A. Grade: Premium, with Grade A faces.
- B. Species: Select white maple.
- C. Cut: Plain sliced (flat sliced).
- D. Match between Veneer Leaves: Book match.
- E. Assembly of Veneer Leaves on Door Faces: Center-balance match.
- F. Exposed Vertical Edges: Same species as faces - edge Type A.
- G. Core: Particleboard or mineral core as needed to provide fire-protection rating indicated.
- H. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.

2.12 FABRICATION**2.13 FACTORY FIT DOORS TO SUIT FRAME-OPENING SIZES INDICATED. COMPLY WITH CLEARANCE REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR FITTING UNLESS OTHERWISE INDICATED.**

- A. Comply with NFPA 80 requirements for fire-rated doors.

2.14 FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED. LOCATE HARDWARE TO COMPLY WITH DHI-WDHS-3. COMPLY WITH FINAL HARDWARE SCHEDULES, DOOR FRAME SHOP DRAWINGS, BHMA-156.115-W, AND HARDWARE TEMPLATES.

- A. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

2.15 FACTORY FINISHING**2.16 GENERAL: COMPLY WITH REFERENCED QUALITY STANDARD FOR FACTORY FINISHING. COMPLETE FABRICATION, INCLUDING FITTING DOORS FOR OPENINGS AND MACHINING FOR HARDWARE THAT IS NOT SURFACE APPLIED, BEFORE FINISHING.**

- A. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.

2.17 FACTORY FINISH DOORS.**2.18 TRANSPARENT FINISH:**

- A. Grade: Premium.
 - B. Finish: WDMA TR-6 catalyzed polyurethane.
-

- C. Staining and Sheen: To be selected by architect from manufacturer's
- D. full range of finishes.

PART 3 EXECUTION

3.01 EXAMINATION

3.02 EXAMINE DOORS AND INSTALLED DOOR FRAMES, WITH INSTALLER PRESENT, BEFORE HANGING DOORS.

- A. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
- B. Reject doors with defects.

3.03 PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.04 INSTALLATION

3.05 HARDWARE: FOR INSTALLATION, SEE SECTION 087100 "DOOR HARDWARE."

3.06 INSTALLATION INSTRUCTIONS: INSTALL DOORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND REFERENCED QUALITY STANDARD, AND AS INDICATED.

- A. Install fire-rated doors according to NFPA 80.
- B. Install smoke- and draft-control doors according to NFPA 105.

3.07 JOB-FITTED DOORS: ALIGN AND FIT DOORS IN FRAMES WITH UNIFORM CLEARANCES AND BEVELS AS INDICATED BELOW; DO NOT TRIM STILES AND RAILS IN EXCESS OF LIMITS SET BY MANUFACTURER OR PERMITTED FOR FIRE-RATED DOORS. MACHINE DOORS FOR HARDWARE. SEAL EDGES OF DOORS, EDGES OF CUTOUTS, AND MORTISES AFTER FITTING AND MACHINING.

- A. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
 - 1. Comply with NFPA 80 for fire-rated doors.
 - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.
- B. Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock edge; trim stiles and rails only to extent permitted by labeling agency.

3.08 FACTORY-FITTED DOORS: ALIGN IN FRAMES FOR UNIFORM CLEARANCE AT EACH EDGE.

3.09 FACTORY-FINISHED DOORS: RESTORE FINISH BEFORE INSTALLATION IF FITTING OR MACHINING IS REQUIRED AT PROJECT SITE.

3.10 ADJUSTING

3.11 OPERATION: REHANG OR REPLACE DOORS THAT DO NOT SWING OR OPERATE FREELY.

3.12 FINISHED DOORS: REPLACE DOORS THAT ARE DAMAGED OR THAT DO NOT COMPLY WITH REQUIREMENTS. DOORS MAY BE REPAIRED OR REFINISHED IF WORK COMPLIES WITH REQUIREMENTS AND SHOWS NO EVIDENCE OF REPAIR OR REFINISHING.

END OF SECTION 08 1416

**SECTION 08 71 00
DOOR HARDWARE**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes:
 - 1. Mechanical door hardware for:
 - a. Swinging doors.

1.03 REFERENCES

- A. UL - Underwriters Laboratories
 - 1. UL 10B - Fire Test of Door Assemblies
 - 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
 - 3. UL 1784 - Air Leakage Tests of Door Assemblies
 - 4. UL 305 - Panic Hardware
- B. DHI - Door and Hardware Institute
 - 1. Sequence and Format for the Hardware Schedule
 - 2. Recommended Locations for Builders Hardware
 - 3. Key Systems and Nomenclature
- C. ANSI - American National Standards Institute
 - 1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
- D. Comply with New York State Education Department 1998 Edition of the Manual of Planning Standards Section S105-Door Hardware and NFPA 101-Life Safety Code.

1.04 SUBMITTALS

- A. General:
 - 1. Submit in accordance with Division 01 requirements.
 - 2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
- B. Action Submittals:
 - 1. Product Data: For each item of hardware indicated furnish manufacturer's catalog sheets highlighting information pertaining specifically to product (s) submitted. Include manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

2. Samples for Verification: Submit production sample of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule if requested.
 3. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:
 - a. Door and frame sizes, materials and door swings.
 - b. Door Index; include door number, heading number, and Architects hardware set number.
 - c. Opening Lock Function Spreadsheet: List locking device and function for each opening.
 - d. Type, style, function, size, and finish of each hardware item.
 - e. Name and manufacturer of each item.
 - f. Fastenings and other pertinent information.
 - g. Location of each hardware set cross-referenced to indications on Drawings, i.e., Corridor to Classroom
 - h. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - i. Mounting locations for hardware.
 - j. Name and phone number for local manufacturer's representative for each product.
 - k. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.
 4. Key Schedule:
 - a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
 - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
 - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
 - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
 - e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
 - 1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
 - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
 5. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.
- C. Informational Submittals:
1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
 2. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 3. Certificates of Compliance:

- a. UL listings for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
 4. Warranty: Special warranty specified in this Section.
- D. Closeout Submittals:
1. Operations and Maintenance Data : Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Name, address, and phone number of local representative for each manufacturer.
 - d. Parts list for each product.
 - e. Final approved hardware schedule, edited to reflect conditions as-installed.
 - f. Final keying schedule
 - g. Copies of floor plans with keying nomenclature
 - h. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.05 QUALITY ASSURANCE

- A. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
 1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.
- C. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
 2. Can provide installation and technical data to Architect and other related subcontractors.
 3. Can inspect and verify components are in working order upon completion of installation.
 4. Capable of producing wiring diagrams.
 5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.
- D. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
 1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
 2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- E. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

- F. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
 - 1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
- G. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
- H. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.
- I. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.
- J. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.
 - 1. Attendees: Owner, Contractor, Architect, Installer, and Supplier's Architectural Hardware Consultant.
 - 2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - b. Preliminary key system schematic diagram.
 - c. Requirements for key control system.
 - d. Requirements for access control.
 - e. Address for delivery of keys.
- K. Pre-installation Conference: Conduct conference at Project site
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Inspect and discuss preparatory work performed by other trades.
 - 3. Review required testing, inspecting, and certifying procedures.
- L. Coordination Conferences:
 - 1. Installation Coordination Conference: After delivery of, but before installation of the hardware, the General Contractor/Construction Manager shall coordinate and schedule a hardware installation seminar. The seminar will be conducted on the installation of locksets, door closers, exit devices, overhead stops and electromechanical or electromagnetic hardware. The manufacturer's representative for each of the above product categories shall conduct the meeting. The seminar shall be conducted at the job site with installers of hardware on wood, hollow metal and aluminum doors (including any installer working with low voltage wiring on electromechanical hardware) in attendance. Seminar will provide training for installation using installation instructions, hardware schedules, templates and physical product samples.
 - a. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
 - 1. Deliver each article of hardware in manufacturer's original packaging.
- C. Project Conditions:
 - 1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
 - 2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- D. Protection and Damage:
 - 1. Promptly replace products damaged during shipping.
 - 2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
 - 3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- E. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.07 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. No concession on the quality of material or quality of application shall be allowed due to non-timely procurement of hardware.
- E. Direct shipments not permitted, unless approved by Contractor.

1.08 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Years from date of Substantial Completion, for durations indicated.
 - a. Closers:
 - 1) Mechanical: 30 years for LCN 4000 series
 - b. Locksets:
 - 1) Mechanical: 10 years for Schlage ND series
 - 2) Mechanical: 3 years for Schlage L9000 series
 - c. Key Blanks: Lifetime

1.09 MAINTENANCE

- A. Maintenance Tools:
 - 1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Requests for material substitution of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category must be submitted to the Architect, Owner, and/or Owner's Agent 10 days prior to bid date. Requests for substitution are to be submitted in writing and are to be accompanied by physical samples. Requests for substitution shall contain written certification from factory that proposed items meet all performance criteria delineated in this document.
- B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

- A. Fasteners
 - 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
 - 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
 - 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
 - 4. Install hardware with fasteners provided by hardware manufacturer.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
 - 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 CONTINUOUS HINGES

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product: Ives
 - 2. Acceptable Manufacturers and Products: Roton, Select

- B. Continuous hinges: BHMA A156.26; minimum 0.120-inch- thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.
- C. Continuous, gear-type hinges: extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.

2.04 HINGES

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product: Ives 5BB1HW series
 - 2. Acceptable Manufacturers and Products: Stanley FBB168 series
- B. Requirements:
 - 1. Provide five-knuckle, bearing hinges conforming to ANSI/BHMA A156.1.
 - 2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
 - 3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
 - 4. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
 - 5. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
 - 6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins
 - 7. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
 - 8. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
 - 9. Provide mortar guard for each electrified hinge specified.

2.05 EXIT DEVICES AND AUXILIARY ITEMS

- A. Scheduled Manufacturer and Product: Von Duprin 99 Series (No Substitution)
- B. Exit devices and auxiliary items: BHMA A156.3, Grade 1
- C. Requirements:
 - 1. All exposed finishes to be Dull Chrome.
 - 2. Lever handle trim to be heavy duty vandal resistance to match lock trim.
 - 3. Keyed cylinder dogging at all non-rated exterior door devices unless otherwise noted.
 - 4. Provide shim kits as required for door lites.

2.06 MORTISE LOCKS

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product: Schlage L9000 series
 - 2. Acceptable Manufacturers and Products: Corbin Russwin ML2000 Series
- B. Requirements:
 - 1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1 Operational, Grade 1 Security, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
 - 2. Indicators: Where specified, provide indicator window measuring a minimum 2 inch x 1/2 inch with 180 degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
 - a. Occupied Indicator: Provide indicator above cylinder for visibility while operating the lock that identifies the trim as occupied/unoccupied status of the door. Indicator in unoccupied state has a white background with black text and icon. Indicator in the occupied state has a red background with white text and icon.
 - 3. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
 - 4. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
 - 5. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
 - a. Lever Design: Schlage 03A.
 - b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.07 MECHANICAL LOCKS AND LATCHES

- A. Manufacturers and Products: Schlage ND Series TLR (No Substitution)
- B. Bored locks BHMA A156.2; Grade 1: Series 4000
- C. Lock functions: as indicated in door hardware schedule.
- D. Lock throw: comply with testing requirements for length of bolts required for labeled fire doors and as follows:
 - 1. Bored Locks: minimum 1/2-inch latchbolt throw
 - 2. Mortise locks: minimum of 3/4-inch latchbolt throw
- E. Lock backset: 2-3/4 inches, unless otherwise indicated
- F. Lock trim:
 - 1. Description: as indicated in door hardware schedule
 - 2. Levers: Zinc alloy
 - 3. Escutcheons (Roses): wrought

- G. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

2.08 CYLINDERS

- A. Manufacturers:
 - 1. Scheduled Manufacturer: Schlage (No Substitution)
- B. Requirements:
 - 1. Provide interchangeable cylinders/cores to match Owner's existing Schlage key system, compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.09 KEYING

- A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Provide permanent cores keyed into Owner's existing factory registered Schlage master keying system in Everest D/T and Everest Primus, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- C. Requirements:
 - 1. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cores involved at no additional cost to Owner.
 - 2. Provide keys with the following features:
 - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - 3. Identification:
 - a. Stamp permanent cores (in a concealed location) with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification.
 - b. Identification stamping provisions must be approved by the Architect and Owner.
 - c. Stamp keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection. Blind code marks shall not include actual key cuts.
 - d. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.
 - e. Forward permanent cores to Owner, separately from keys, by means as directed by Owner.
 - 4. Quantity: Furnish in the following quantities.
 - a. Change Keys: 3 per cylinder/core.
 - b. Permanent Control Keys: 3.
 - c. Master Keys: 6.

2.10 DOOR CLOSERS

- A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4010/4110 series (No Substitution)

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter, with 5/8 inch (16 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with a solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Covers: Metal
9. Pressure Relief Valve (PRV) Technology: Not permitted.
10. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI/BHMA Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
11. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Rockwood

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled with countersunk screw holes. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:
 - a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
 - b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
 - c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.12 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.

2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.13 DOOR STOPS AND HOLDERS

- A. Manufacturers:
 1. Scheduled Manufacturer: Ives
 2. Acceptable Manufacturers: Rockwood
- B. Provide door stops at each door leaf:
 1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
 2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
 3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.14 GASKETING

- A. Manufacturers:
 1. Scheduled Manufacturer: Zero International
 2. Acceptable Manufacturers: National Guard, Reese
- B. Requirements:
 1. Provide gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.

2.15 FINISHES

- A. Finish: BHMA 626/652 (US26D); except:
 1. Hinges at Exterior Doors: BHMA 630 (US32D)
 2. Protection Plates: BHMA 630 (US32D)
 3. Overhead Stops and Holders: BHMA 630 (US32D)
 4. Door Closers: Powder Coat to Match
 5. Wall Stops: BHMA 630 (US32D)
 6. Weatherstripping: Clear Anodized Aluminum
 7. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Where on-site modification of doors and frames is required:
 - 1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
 - 2. Field modify and prepare existing door and frame for new hardware being installed.
 - 3. When modifications are exposed to view, use concealed fasteners, when possible.
 - 4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
 - a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
 - b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
 - c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.03 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- G. Lock Cylinders:
 - 1. Furnish permanent cores to Owner for installation.
- H. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- I. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.
- J. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- K. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- L. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

3.04 FIELD QUALITY CONTROL

- A. The manufacturer's representative(s) for the locking devices and closing devices shall inspect and approve the installation of the products whose manufacturer they represent. Incorrectly installed hardware must be reported to the Architect before preparation of the final punch list.

3.05 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.06 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.

- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.07 DEMONSTRATION

- A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

3.08 DOOR HARDWARE SCHEDULE

- A. Hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.
- B. GC to confirm the salvage of all removed hardware with the Owner prior to disposal. Turn over to Owner any hardware items identified for salvage and dispose of the balance.
- C. Hardware Codes:

103	3 ea.	hinges 5BB1 4-1/2 x 4-1/2 US26D
200	1 ea.	closer (pull side) 4011 MC AL x TB
402	1 ea.	lockset (storeroom) ND80TD TLR 626
503	3 ea.	silencers SR64
600	1 ea.	kick plate 8400 – 10”H x 2”LDW .050 B4E CSK US32D

- D. Hardware Sets (Doors/Codes):

	<u>OSSINING HIGH SCHOOL</u>
<u>SET 1</u>	
1/L-1.3	103-200-402-503-600

END OF SECTION 08 7100