

SECTION 08110 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Extent of standard steel doors and frames is indicated and scheduled on drawings.

Note: Interior Hollow Metal Doors and Frames. (Rated and Unrated).

Finish hardware is specified elsewhere in Division 8.

Building in of anchors and grouting of frames in masonry construction is specified in Division 4.

QUALITY ASSURANCE:

Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.

Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

Comply with UL-10C requirements for Positive Pressure Fire Testing.

Overlapping astragals shall not be required on the meeting edge of standard swing and double egress door pairs as a condition of the indicated rating or opening size.

Provide fixed metal label at each fire assembly component.

SUBMITTALS:

Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.

Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

Indicate coordination of glazing frames and stops with glass and glazing requirements.

DELIVERY, STORAGE AND HANDLING:

Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory finished doors.

Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

Store doors and frames at building site under cover. Place units on minimum 4 inch high wood blocking. Avoid use of nonvented plastic or canvas shelters that could create a humidity chamber. If cardboard wrapper on door becomes wet, remove, remove carton immediately. Provide ¼ inch space between stacked doors to promote circulation.

PART 2 - PRODUCTS

ACCEPTABLE MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide steel doors and frames by one of the following:

Steel Doors and Frames, (General):

Allied Steel Doors
Amweld/Div. American Welding & Mfg. Co.
Ceco Corp.
Curries
D & D Specialties
Pioneer Industries, Inc.
Steelcraft/Div. American Standard Co.
Republic Builders Products Corp./Subs. Republic Steel.

MATERIALS:

Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, or drawing quality, ASTM A 642, hot dipped galvanized in accordance with ASTM A 525, with A60 or G60 coating designation, mill phosphatized.

Stainless-Steel Sheets: austenitic stainless steel, Type 304, complying with ASTM A 666.

Supports and Anchors: Fabricate of not less than 18- gage galvanized sheet steel.

Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanized items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable. (Stainless steel in stainless steel applications.)

SHOP APPLIED PAINT:

Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

FABRICATION, GENERAL:

Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory- assembled before shipment, to assure proper assembly at project site. Comply with SDI-100 requirements as follows:

Internal Construction: Manufacturer's standard honeycomb, polyurethane, polystyrene, unitized steel grid, vertical stiffeners, or rigid mineral fiber core with sound deadener on the inside face of sheets where appropriate in accordance with SDI standards.

Clearances: Not more than 1/8" at jambs and heads except between non-rted pairs of doors not more than 1/4". Not more than 5/8" at bottom/

Interior Doors: SDI-100, Grade II, heavy-duty, Model 3 or 4, minimum 18-gage faces.

Exterior Doors: SDI-100, Grade III, insulated with rigid foam, extra heavy-duty, Model 2, minimum 16-gage, A60 galvanized faces.

Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-rolled steel.

Fabricate frames, concealed stiffeners, reinforcement, edge channels, and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).

Fabricate exterior doors, panels, and frames from galvanized sheet in accordance with SDI-112. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted concealed steel channels.

Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.

Thermal-Rated (Insulating) Asemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236 or ASTM C 976 on fully operable door assemblies.

Unless otherwise indicated, provide thermal rated assemblies with "U" factor of 0.41 BTU (hr x sq. ft. x deg F.) or better.

Finish Hardware Preparation: Prepare doors and frames to receive finish hardware in accordance with final Finish Hardware Schedule and templated provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware. Where heavyweight hinges are scheduled in sets, furnish full width hinge reinforcements, welded top and bottom at both rabbets.

Reinforce doors and frames to receive surface-applied hardware.

Locate finish hardware as indicated on final shop drawings or, if not shown, in accordance with "Recommended Locations for Builder's Hardware," published by Door and Hardware Institute.

FINISHES:

SHOP PAINTING (HOLLOW METAL DOORS AND FRAMES)

Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

Glazing Stops: Minimum 20 guage steel.

Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.

Provide screw applied removable glazi beads on inside of glass, louvers, and other panels in doors.

STANDARD STEEL DOORS:

Provide metal doors of types and styles indicated on drawings or schedules. Refer to SDI/ANSI A250.8 for acceptable clearances. Door undercut shall be 5/8"

Bevel lock edge of single leaf and active leaf of pairs of doors 1/8" in 2". Hinge edges and lock edge of inactive leaf of pairs of doors shall be square.

Astragal at inactive leaf of pairs of doors shall be 16 gauge "Z" type attached to inactive leaf.

FRAMES:

Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled furniture steel.

Fabricate exterior frames, rated frames and CMU wall frames with mitered corners, welded construction for exterior applications and interior applications. Weld face, rabbets and stop continuously, grind faces smooth and touch up with shop primer.

Fabricate interior door frames installed in drywall partitions as knock-down frames with the diagonal corner joint and exposed screws field filled and sanded smopth prior to painting.

Door Silencers: Except on gasketed frames, drill stops to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

Plaster Guards: Provide 26-gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

PART 3 - EXECUTION

INSTALLATION:

General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

Placing Frames: Comply with provisions of SDI-105 "Recommended Erection Instructions for Steel Frames", unless otherwise indicated.

Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction at enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.

At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

Install fire-rated frames in accordance with NFPA Std. No. 80.

Door Installation:

Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

ADJUST AND CLEAN:

Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.

Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION 08110

SECTION 08211 - FLUSH WOOD DOORS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to of this section.

SUMMARY:

Extent and location of each type of flush wood door is indicated on drawings and in schedules.

Types of doors required include the following:

 Prefinished Solid core flush wood doors with wood veneer faces. (Fire Rated and Unrated)

Glass Openings for flush wood doors, including furnishing and installation, (if required) are specified under this section.

Applied Wood Trim where indicated on drawings

SUBMITTALS:

Product Data: Door manufacturer's technical data for each type of door, including details of core and edge construction, trim for openings and louvers, and factory-finishing specifications.

Shop Drawings: Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and other pertinent data.

QUALITY ASSURANCE:

Quality Standards: Comply with the following standards:

WDMA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors", of Window and Door Manufacturer's Association (WDMA).

AWI Quality Standards: "Architectural Woodwork Quality Standards", including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish, and other requirements exceeding those of NWWDA quality standard.

WDMA Quality Marking: Mark each wood door with WDMA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of WDMA I.S. 1 Series.

Fire-Rated Wood Doors: Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are labeled and listed for ratings indicated by UL, Warnock Hersey or other testing and inspection agency acceptable to authorities having jurisdiction. Fire Doors must comply with UL-10C for positive pressure and smoke and draft control

Manufacturer: Obtain doors from a single manufacturer to insure uniformity in quality of appearance and construction, unless otherwise indicated.

PRODUCT DELIVERY, STORAGE, AND HANDLING:

Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors", as well as with manufacturer's instructions.

Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames and hardware, using temporary, removable or concealed markings.

PROJECT CONDITIONS:

Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to project's geographical location:

Referenced AWI quality standard including Section 100-S-3 "Moisture Content".

SPECIFIED PRODUCT WARRANTY:

Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors which have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.

Warranty shall also include reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent to hanging.

Warranty shall be in effect during following period of time after date of Substantial Completion.

Solid Core Interior Doors: **Life of installation.**

Contractor's Responsibilities: Replace or refinish doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

PART 2 - PRODUCTS

MANUFACTURERS:

Available Manufacturers: Subject to compliance with requirements, manufacturers offering door which may be incorporated in the work include, but are not limited to, the following:

Solid Core Doors with Wood Veneer Faces:

Algoma Hardwoods, Inc.
Eggers Industries, Architectural Door Division.
Graham Architectural Wood Doors
Marshfield Door Company
VT Industries

INTERIOR FLUSH WOOD DOORS:

Solid Core Doors for Stained Finish: Comply with the following requirements:

Typical wood door:

Faces: Select White Birch, Plain Sliced.

Edges: Species matched to face veneer

AWI Grade: Premium. (for factory prefinishing)

Construction: SCLC-5 or SCLC-7 (Structural composite lumber core,).

Adhesives: Use Type I adhesive for faces and crossbands on all doors

Fire-Rated Solid Core Doors: Comply with the following requirements:

Faces and AWI Grade: Provide faces and grade to match non-rated doors in same area of building, unless otherwise indicated.

Construction: Manufacturer's standard core construction as required to provide fire-resistance rating indicated.

Edge Construction: Provide manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance. Edge veneer wood species shall match face veneer. Furnish mineral core doors with Category "A" imbedded intumescent sealant for positive pressure compliance.

Pairs: Furnish fire rated pairs with fire-retardant stiles that are labeled and listed for kinds of applications indicated without formed steel edges and astragals.

LOUVERS AND LIGHT FRAMES:

Applied Wood Moulding: Provide moulded profile as indicated on the drawings from wood species that matches the door species.

Wood Louvers: Door manufacturer's standard **square edged** matching veneer solid wood louvers, unless otherwise indicated, and of size indicated.

Wood Beads for Light Openings: Manufacturer's standard **square edged** wood-veneer beads matching veneer species of door faces and meeting required fire ratings. See Glazing Schedule in Glass and Glazing Specification Section 08800 for types of door glazing.

FABRICATION:

Fabricate flush wood doors to produce doors complying with following requirements:

In sizes indicated pre-fit, beveled and machined for scheduled hardware. Mortise for all mortise type hardware; provide wood blocking for surface closers, overhead stops, lock trim and exit devices.

Bevel lock edge 1/8" in 2". Undercut doors in accordance with requirements for fire rated doors. Non-rated doors shall be undercut 1/2" as standard.

Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.

Light Openings: Trim openings with moldings of material and profile indicated.

Louvers: Factory install wood louvers in prepared openings.

PART 3 - EXECUTION

EXAMINATION:

Examine installed door frames prior to hanging door:

Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.

Reject doors with defects.

Do not proceed with installation until unsatisfactory conditions have been corrected.

INSTALLATION:

Hardware: For installation see Division-8 "Finish Hardware" section of these specifications.

Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.

Install fire-rated doors in corresponding fire-rated frames in accordance with requirements of NFPA No. 80.

Job-Fit 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 with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

Fitting Clearances for Non-Rated Doors: Provide 1/8" at jambs and heads; 1/16" per leaf at meeting stiles for pairs of doors; and 1/4" (+/- 1/8") from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/8" clearance from bottom of door to top of threshold.

Fitting Clearances for Fire-Rated Doors: Comply with NFPA 80.

Prefit Doors: Fit to frames for uniform clearance at each edge.

ADJUSTING AND PROTECTION:

Operation: Rehang or replace doors which do not swing or operate freely.

Finished Doors: Refinish or replace doors damaged during installation.

Protect doors as recommended by door manufacturer to assure that wood doors will be without damage or deterioration at time of Substantial Completion.

END OF SECTION 08211

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

2. This Section includes commercial door hardware for the following:
 - a) Swinging doors.
 - b) Other doors to the extent indicated.
3. Door hardware includes, but is not necessarily limited to, the following:
 - a) Mechanical door hardware.
 - b) Electromechanical door hardware.
 - c) Cylinders specified for doors in other sections.
4. Related Sections:
 - a) Division 08 Section “Hollow Metal Doors and Frames”.
 - b) Division 08 Section “Flush Wood Doors”.
 - c) Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
 - d) Division 28 Section “Access Control Hardware Devices”.
5. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - a) ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - b) ICC/IBC - International Building Code.
 - c) NFPA 70 - National Electrical Code.
 - d) NFPA 80 - Fire Doors and Windows.
 - e) NFPA 101 - Life Safety Code.
 - f) NFPA 105 - Installation of Smoke Door Assemblies.
 - g) State Building Codes, Local Amendments.
6. Standards: All hardware specified herein shall comply with the following industry standards:
 - a) ANSI/BHMA Certified Product Standards - A156 Series
 - b) UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

7. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

8. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
- a) Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - b) Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - c) Content: Include the following information:
 - (1) Type, style, function, size, label, hand, and finish of each door hardware item.
 - (2) Manufacturer of each item.
 - (3) Fastenings and other pertinent information.
 - (4) Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - (5) Explanation of abbreviations, symbols, and codes contained in schedule.
 - (6) Mounting locations for door hardware.
 - (7) Door and frame sizes and materials.
 - (8) Warranty information for each product.
 - d) Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
9. Shop Drawings: Details of electrified access control hardware indicating the following:
- a) Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - (1) Wiring instructions for each electronic component scheduled herein.
 - b) Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
10. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
11. Informational Submittals:

- a) Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

12. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

13. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

14. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

15. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

16. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

- a) Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
- b) Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

17. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

18. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

- a) Function of building, purpose of each area and degree of security required.
- b) Plans for existing and future key system expansion.
- c) Requirements for key control storage and software.
- d) Installation of permanent keys, cylinder cores and software.
- e) Address and requirements for delivery of keys.

19. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

- a) Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
- b) Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
- c) Review sequence of operation narratives for each unique access controlled opening.
- d) Review and finalize construction schedule and verify availability of materials.
- e) Review the required inspecting, testing, commissioning, and demonstration procedures

20. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

21. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

22. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

23. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

24. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

25. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

26. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

27. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

28. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

- a) Structural failures including excessive deflection, cracking, or breakage.
- b) Faulty operation of the hardware.
- c) Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- d) Electrical component defects and failures within the systems operation.

29. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

30. Special Warranty Periods:

- a) Seven years for heavy duty cylindrical (bored) locks and latches.
- b) Five years for exit hardware.
- c) Twenty five years for manual surface door closer bodies.
- d) Twenty five years for manual surface door closer bodies.
- e) Twenty five years for manual surface door closer bodies.
- f) Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

31. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

32. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

33. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

- a) Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

34. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

35. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

- a) Quantity: Provide the following hinge quantity:
 - (1) Two Hinges: For doors with heights up to 60 inches.
 - (2) Three Hinges: For doors with heights 61 to 90 inches.
 - (3) Four Hinges: For doors with heights 91 to 120 inches.
 - (4) For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
- b) Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - (1) Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - (2) Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
- c) Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - (1) Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - (2) Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
- d) Hinge Options: Comply with the following:
 - (1) Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
- e) Manufacturers:
 - (1) Hager Companies (HA) - CB Series.
 - (2) McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - TA Series.
 - (3) Stanley Hardware (ST) - CB Series.

2.3 DOOR OPERATING TRIM

36. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

- a) Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
- b) Furnish dust proof strikes for bottom bolts.
- c) Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
- d) Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
- e) Manufacturers:
 - (1) Door Controls International (DC).
 - (2) Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - (3) Trimco (TC).

37. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
- a) Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 - b) Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 - c) Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 - d) Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 - e) Manufacturers:
 - (1) Burns Manufacturing (BU).
 - (2) Hiawatha, Inc. (HI).
 - (3) Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

2.4 CYLINDERS AND KEYING

38. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
39. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
40. Cylinders: Original manufacturer cylinders complying with the following:
- a) Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 - b) Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - c) Bored-Lock Type: Cylinders with tailpieces to suit locks.
 - d) Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - e) Keyway: Manufacturer's Standard. Match Facility Standard.
41. Keying System: Each type of lock and cylinders to be factory keyed.
- a) Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
 - b) Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - c) Existing System: Field verify and key locks to match Owner's existing system.
42. Key Quantity: Provide the following minimum number of keys:
- a) Change Keys per Cylinder: Two (2)
 - b) Master Keys (per Master Key Level/Group): Five (5).
 - c) Construction Keys (where required): Ten (10).
43. Construction Keying: Provide construction master keyed cylinders.

44. Key Registration List (Bitting List):

- a) Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
- b) Provide transcript list in writing or electronic file as directed by the Owner.

45. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

- a) Manufacturers:
 - (1) Lund Equipment (LU).
 - (2) MMF Industries (MM).
 - (3) Telkee (TK).

46. Key Control Software: Provide one network version of "Key Wizard" branded key management software package that includes one year of technical support and upgrades to software at no charge. Provide factory key system formatted for importing into "Key Wizard" software.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

47. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified.

- a) Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
- b) Locks are to be non-handed and fully field reversible.
- c) Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.2 requirements to 2 million cycles.
- d) Manufacturers:
 - (1) Corbin Russwin Hardware (RU) – CL3300 Series.
 - (2) Sargent Manufacturing (SA) – 10 Line.
 - (3) Schlage (SC) – ND Series.

2.6 LOCK AND LATCH STRIKES

48. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

- a) Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
- b) Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
- c) Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

d) Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

49. Standards: Comply with the following:

- a) Strikes for Mortise Locks and Latches: BHMA A156.13.
- b) Strikes for Bored Locks and Latches: BHMA A156.2.
- c) Strikes for Auxiliary Deadlocks: BHMA A156.36.
- d) Dustproof Strikes: BHMA A156.16.

2.7 MECHANICAL LOCKS AND LATCHING DEVICES

50. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

- a) Manufacturers:
 - (1) Sargent (SA) – 8200 Series.
 - (2) Stanley Best (BE) – 40H-UN Series.
 - (3) Yale Locks and Hardware (YA) – 8800FL Series.

2.8 LOCK AND LATCH STRIKES

51. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

- a) Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
- b) Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
- c) Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
- d) Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

52. Standards: Comply with the following:

- a) Strikes for Mortise Locks and Latches: BHMA A156.13.
- b) Strikes for Bored Locks and Latches: BHMA A156.2.
- c) Strikes for Auxiliary Deadlocks: BHMA A156.36.
- d) Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

53. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

- a) At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
- b) Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the

proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

- c) Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
- d) Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - (1) Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - (2) Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
- e) Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
- f) Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
- g) Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
- h) Extended cycle test: Devices to have been cycle tested in ordinance with ANSI/BHMA 156.3 requirements to 50 million cycles.
- i) Rail Sizing: Provide exit device rails factory sized for proper door width application.
- j) Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

54. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

- a) Manufacturers:
 - (1) Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - (2) Sargent Manufacturing (SA) - 80 Series.
 - (3) Von Duprin (VD) - 35A/98 XP Series.

2.10 DOOR CLOSERS

55. All door closers specified herein shall meet or exceed the following criteria:

- a) General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
- b) Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

- c) Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
- d) Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
- e) Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
- f) Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

56. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

- a) Manufacturers:
 - (1) Corbin Russwin Hardware (RU) - DC8000 Series.
 - (2) LCN Closers (LC) - 4040XP Series.
 - (3) Sargent Manufacturing (SA) - 281 Series.

57. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 certified surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

- a) Manufacturers:
 - (1) Corbin Russwin Hardware (RU) - DC6000 Series.
 - (2) LCN Closers (LC) - 1450 Series.
 - (3) Norton Door Controls (NO) - 7500 Series.

2.11 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate 12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

- 1. Manufacturers:
 - a. LCN Door Closers (LC) - SEM7800 Series.
 - b. Rixson (RF) - 980/990 Series.
 - c. Sargent Manufacturing (SA) - 1560 Series.

2.12 ARCHITECTURAL TRIM

58. Door Protective Trim

- a) General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
- b) Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
- c) Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
- d) Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - (1) Stainless Steel: 300 grade, 050-inch thick.
- e) Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
- f) Manufacturers:
 - (1) Hiawatha, Inc. (HI).
 - (2) Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - (3) Trimco (TC).

2.13 DOOR STOPS AND HOLDERS

- 59. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- 60. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - a) Manufacturers:
 - (1) Hiawatha, Inc. (HI).
 - (2) Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - (3) Trimco (TC).

2.14 ARCHITECTURAL SEALS

- 61. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and

provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

62. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

a) Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

63. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

64. Manufacturers:

- a) National Guard Products (NG).
- b) Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
- c) Reese Enterprises, Inc. (RE).

2.15 FABRICATION

65. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.16 FINISHES

66. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

67. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

68. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

69. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

70. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- 71. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- 72. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- 73. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - a) Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- 74. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - a) Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - b) Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - c) Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - d) Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- 75. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- 76. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- 77. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 ADJUSTING

- 78. 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.

3.5 CLEANING AND PROTECTION

79. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
80. Clean adjacent surfaces soiled by door hardware installation.
81. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.6 DEMONSTRATION

82. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.7 DOOR HARDWARE SETS

83. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
84. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

1. MK - McKinney
2. NO - Norton Closers
3. PE - Pemko
4. RF - Rixson
5. RO - Rockwood
6. SA - Sargent

HARDWARE SETS

Set: 1.0

Doors: 100, 102

Description: Push/Pull with Closer

3 Hinges, Full Mortise	TA2714 NRP	US3	MK
1 Push Plate	70F	US3	RO
1 Pull Plate	BF 111x70C	US3	RO
1 Surface Closer	PR7500 SN-134	696	NO
1 Kick Plate	K1050 8" high	US3	RO
1 Wall Stop	406	US3	RO
3 Silencers	608		RO

Set: 2.0

Door: 101

Description: Rated Passage Function Exit Pair

8 Hinges, Full Mortise	TA2714 NRP	US3	MK
2 Vertical Rod Latch Sets (LBR)	12 NB7015 15 ETB	US3	SA
2 Surface Closers	PR7500 SN-134	696	NO
Meeting Stile Seal	S771GR		PE
Gasketing (Head and Jambs)	S88GR		PE
2 Electromagnetic Holders	998M	US3	RF

Note: Electromagnetic holders are tied to fire alarm system for release in event of fire.

Set: 3.0

Door: 105

Description: Rated Classroom Function with Closer

3 Hinges, Full Mortise	TA2714 NRP	US3	MK
1 Classroom Lock	8237 LE2B	US3	SA
1 Surface Closer	PR7500 SN-134	696	NO
1 Kick Plate	K1050 8" high	US3	RO
1 Wall Stop	406	US3	RO
Perimeter Gasketing	S88GR		PE

END OF SECTION 087100

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