



ADDENDUM #2

November 3, 2009

Re: Harrisburg Area Community College
Gettysburg Campus
Welcome Center and Facilities Office Renovations
Solicitation #10-16

From: Eastern pcm, LLC
645 N. 12th Street
Lemoyne, PA 17043

To: All Planholders

This Addendum is hereby made part of the Plans and Specifications dated October 2, 2009 for the above referenced project. The provisions of this Addendum are intended to supplement the provisions of the Plans and Specifications and/or supersede them where contradictory thereto.

This Addendum contains changes to the requirements of the Plans and Specifications. Such changes shall be incorporated into the Plans and Specifications and shall apply to work with the same meaning and force as if they had been included in the original Plans and Specifications. Where this Addendum modifies a portion of a paragraph or phrase of the Project Manual, the remaining unmodified portion of the paragraph or phrase shall remain in force.

The conditions and terms of the Plans and Specifications shall govern work described in this Addendum. Whenever the conditions of work, or the quality or quantity of materials or workmanship are not fully described in this Addendum, the conditions of work etc. included in the Plans and Specifications for similar items of work shall apply to the work described in this Addendum. If no similar items of work are included in the Plans and Specifications, the quality of material and workmanship shall be subject to the written acceptance of the Architect.

2.1 QUESTIONS/ANSWERS AND CLARIFICATIONS

Questions received as of the date of this Addendum are listed below with corresponding responses:

- a. **Q:** What is the style and pattern for the flooring in the Facilities Office?
- A:** The flooring for Rooms 2 and 3 is Teknoflor: Naturals Collection -Beechnut & Regal Cherry. The two color pattern will be determined at a later date. The flooring for Rooms 4, 7, and 9 will be Teknoflor: either Beechnut or Regal Cherry, one color will be determined at a later date. Rooms 1 and 8 shall be Collins & Aikman carpet tile #55009 – Indian Summer. Solid colors selected from Bing cherry/Purple Haze/Terra Rosa. Color and pattern to be determined.
- b. **Q:** What is the style and pattern for the flooring in the Welcome Center?
- A:** The entryway will be Teknoflor: Naturals Collection-Beechnut & Regal Cherry. The two color pattern will be determined at a later date. Carpeting will be Collins & Aikman carpet tile #55009 – Indian Summer. Solid colors selected from Bing cherry/Purple Haze/Terra Rosa. Color and pattern to be determined.
- c. **Q:** Do you know the deck height in the Facilities Office?
- A:** The deck height is approximately 14' AFF.
- d. **Q:** Please specify the R-value for the roof insulation at the vestibule addition.
- A:** The batt roof insulation should be R-30, foil faced. See Key Note 30, Drawing A-6.
- e. **Q:** Please clarify the tile type and item # for Acoustical Cloud (Vector, Ultima, or Optima). We also need the height of the Axiom-Vector trim, 2", 4" or 6", on Drawing A-4.
- A:** Acoustical Ceiling tile shall be Ultima. Item numbers will be confirmed upon review of the product submittal. Axiom-Vector trim shall be 4".
- f. **Q:** Please clarify the tile type and item # for Acoustical Ceiling Tile – Section 095123. Ultima does not have a ceiling tile with AC: not less than 200, the most you can get is AC:170. This tile does not come in 9/16".
- A:** Acoustical Ceiling tile shall be Ultima. Item numbers will be confirmed upon review of the product submittal.
- g. **Q:** Can you clarify what type of tint is to be applied to the existing windows?
- A:** Type of tint to be determined at a later date.

- h. **Q:** T-1 is showing both storage areas are outside the scope for the Facilities Office area, however, the electrical plan is showing new C & C1 fixtures in this area. Please clarify. If new fixtures are to be installed in this area, please specify the existing ceiling type and height.
- A:** There is no architectural work; however, the electrical work that is being specified is correct. Contractor to field verify the existing conditions of the ceiling.
- i. **Q:** In the Facilities Office; windows at RM-8 Reception and RM-7 Office 3 are shown to receive new HM frames and rated glass; however, demolition note at these areas calls for the removal of glazing only. Please confirm whether or not these locations are to receive new HM frames and glazing. Also, there is no elevation provided for these units.
- A:** Remove the existing glazing and frames. Contractor to confirm existing opening size in the field.

2.2 CHANGES TO DRAWINGS

a. T-1 – Title Sheet

Item No. 3, Drawing T-1, REVISE “area outside of scope” to read “limited scope of work”

b. D-2 – Demo. Plans

REVISE “remove existing glazing” to read “remove existing glazing and frames”

c. A-4 – Floor Plan & RCP

REVISE Note 17 to read “New 45 Min Glazing in New H.M. Frames. Confirm existing opening size in field.”

DELETE Note 25 – Paint existing CMU. Seal existing exposed rear CMU and paint.

2.3 CHANGES TO PROJECT MANUAL

Section 087100 – Door Hardware

ADD section 087100 – Door Hardware.

END OF ADDENDUM

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Mechanical door hardware for swinging doors.
- B. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames"
 - 2. Division 08 Section "Aluminum Framed Entrances and Storefronts"
 - 3. Division 08 Section "Flush Wood Doors"

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Details of electrified door hardware, indicating the following:
 - 1. Wiring Diagrams: For power, signal, and control wiring and including the following:
 - a. Details of interface of electrified door hardware and building safety and security systems.
 - b. Schematic diagram of systems that interface with electrified door hardware.
 - c. Point-to-point wiring.
 - d. Risers.
 - e. Elevations doors controlled by electrified door hardware.
 - 2. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.
- C. Samples for Verification: For exposed door hardware of each type required, in each finish specified, prepared on Samples of size indicated below. Tag Samples with full description for coordination with the door hardware schedule. Submit Samples before, or concurrent with, submission of door hardware schedule.

1. Sample Size: Full-size units or minimum 2-by-4-inch (51-by-102-mm) Samples for sheet and 4-inch (102-mm) long Samples for other products.
 - a. Full-size Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
- D. Other Action Submittals:
1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - a. 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 the fabrication of other work that is critical in Project construction schedule.
 - b. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - c. Content: Include the following information:
 - 1) Identification number, location, hand, fire rating, size, and material of each door and frame.
 - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - 4) Fastenings and other pertinent information.
 - 5) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 6) Mounting locations for door hardware.
 - 7) List of related door devices specified in other Sections for each door and frame.
 2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.
- E. Qualification Data: For Installer
- F. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

- G. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.
- H. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 - 1. Warehousing Facilities: In Project's vicinity.
 - 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
 - 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Source Limitations: Obtain each type of door hardware from a single manufacturer.
 - 1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- C. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies 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, unless otherwise indicated.
- D. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC/ANSI A117.1
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 - 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 - b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.
- F. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Construction Manager, Contractor, conference participants shall also include Owner's security consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 2. Preliminary key system schematic diagram.
 3. Requirements for key control system.
 4. Requirements for access control.
 5. Address for delivery of keys.
- G. Preinstallation 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. Inspect and discuss electrical roughing-in for electrified door hardware.
 4. Review sequence of operation for each type of electrified door hardware.
 5. Review required testing, inspecting, and certifying procedures.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
 - B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
 - C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
 - D. Deliver keys to Owner by registered mail or overnight package service.
- 1.6 COORDINATION
- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.
 - 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. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.7 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. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Three years from date of Substantial Completion, unless otherwise indicated.
 - a. Electromagnetic Locks: Five years from date of Substantial Completion.
 - b. Exit Devices: Two years from date of Substantial Completion.
 - c. Manual Closers: 10 years from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Provide parts and supplies that are the same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled on Drawings to comply with requirements in this Section.
1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products.
 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

2.2 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
1. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
 2. 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-swing Corridor Doors: Non-removable pins
 - d. Interior doors: Non-rising pins
 - e. Tips: Flat button and matching plug, finished to match leaves
 - f. Number of hinges: Provide 3 hinges per door leaf.
 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Hager Companies.
 - b. IVES Hardware; an Ingersoll-Rand company.
 - c. McKinney Products Company; an ASSA ABLOY Group company.

2.3 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. 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 (13-mm) latchbolt throw.
 2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
 3. Deadbolts: Minimum 1-inch (25-mm) bolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm), unless otherwise indicated.

- D. 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.
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
 4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.
- E. Mortise Locks: BHMA A156.13; Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Best Access Systems "45 H Series".
 - b. Falcon Lock Co. "M Series"
 - c. Sargent – "8200 Series"
- F. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
 - b. Dortronics Systems, Inc.
 - c. DynaLock Corp.
 - d. Folger Adam Electric Door Controls; an ASSA ABLOY Group company.
 - e. HES, Inc.; an ASSA ABLOY Group company.
 - f. Rutherford Controls Int'l. Corp.
 - g. Security Door Controls.
 - h. Trine Access Technology.
 - i. Von Duprin; an Ingersoll-Rand company.

2.4 EXIT DEVICES AND AUXILIARY ITEMS

- A. Exit Devices and Auxiliary Items: BHMA A156.3.
1. Manufacturers: Subject to compliance with requirements, provide products by:
 - a. Von Duprin; an Ingersoll-Rand company.

2.5 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
1. Manufacturer: Same manufacturer as for locking devices.

- B. Standard Lock Cylinders: BHMA A156.5; Grade 1; permanent cores that are interchangeable; face finished to match lockset.
- C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 6 construction master keys.

2.6 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
 - 1. No Master Key System: Only change keys operate cylinder.
 - 2. Master Key System: Change keys and a master key operate cylinders.
 - 3. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.
 - 4. Existing System:
 - a. Master key or grand master key locks to Owner's existing system.
 - b. Re-key Owner's existing master key system into new keying system.
 - 5. Keyed Alike: Key all cylinders to same change key.
- B. Keys: Nickel silver
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: "Do Not Duplicate"
 - 2. Quantity: In addition to one extra key blank for each lock, provide the following:
 - a. Cylinder Change Keys: Three.
 - b. Master Keys: Five.
 - c. Grand Master Keys: Five.
 - d. Extra blank for each lock: One
 - e. Construction Master Keys: 6
 - f. Control Keys: 6

2.7 KEY CONTROL SYSTEM

- A. Key Lock Boxes: Designed for storage of 10 keys:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by:
 - a. Knox Company.

2.8 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; stainless steel, unless otherwise indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. IVES Hardware; an Ingersoll-Rand company.
 - b. Rockwood Manufacturing Company.
 - c. Quality

2.9 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Dor-O-Matic "SC-70 Series".
 - b. Norton Door Controls "7500 Series"
 - c. Yale Security Inc "4400 Series"

2.10 CONCEALED CLOSERS

- A. Concealed Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
 1. Manufacturers: Subject to compliance with requirements, [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on [Drawings] [schedule] or comparable product by one of the following:
 - a. DORMA Architectural Hardware; Member of The DORMA Group North America.
 - b. LCN Closers; an Ingersoll-Rand company.
 - c. Norton Door Controls; an ASSA ABLOY Group company.
 - d. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
 - e. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
 - f. <Insert manufacturer's name>.

2.11 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot (0.000774 cu. m/s per m) of crack length for gasketing other than for smoke control, as

tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. National Guard Products.
- b. Reese Enterprises, Inc.
- c. Zero International.

2.12 THRESHOLDS

- A. Thresholds: BHMA A156.21; fabricated to 1" deeper than width of opening indicated.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. National Guard Products.
 - b. Reese Enterprises, Inc.
 - c. Zero International.

2.13 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. IPC Door and Wall Protection Systems, Inc.
 - b. IVES Hardware; an Ingersoll-Rand company.
 - c. Quality

2.14 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.
 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:
 - a. Wood or Machine Screws: For the following:
 - 1) Hinges mortised to doors or frames.
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.
 - b. Steel Through Bolts: For the following unless door blocking is provided:
 - 1) Surface hinges to doors.
 - 2) Closers to doors and frames.
 - 3) Surface-mounted exit devices.
3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."
5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.15 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. 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. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- 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: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

3.3 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 door hardware item to comply with manufacturer's 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 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).
- E. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Owner.
 2. Furnish permanent cores to Owner for installation.
- F. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- G. Boxed Power Supplies: Locate power supplies above accessible ceilings.
1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.
- H. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- I. 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 will impede traffic.
- J. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- K. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- L. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 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. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 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 that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION 087100