

ALTERATION – PHASE 1

**WINDERMERE ELEMENTARY SCHOOL  
2 ABBOTT ROAD  
ELLINGTON, CT 06029  
STATE PROJECT NO. 048-0059 A**

S/P+A PROJECT NO. 12.253

**DATE: January 9, 2014**

The following changes to the Drawings and Project Specifications shall become a part of the Drawings and Project Specifications; superseding previously issued Drawings and Project Specifications to the extent modified by Addendum No. 5.

**General Information/Clarifications:**

- See attached RFIs. (1)

**Changes to the Addenda:**

- ADDENDUM #4, Page 1, General Information/Clarifications:
  - First bullet, revise “at 10:00am” to read “from 10:30am-12:30pm”.
  - Second bullet, revise “January 16” to read “January 15”.

**Changes to the Specifications:**

- TABLE OF CONTENTS, Page 2, Division 8 – Openings, Section 087100, Door Hardware, Pages, revise “11” to read “14”.
- SECTION 029500, HAZARDOUS/REGULATED ITEM/MATERIAL MANAGEMENT, Page 16, Article 3.11.A., delete all but the first sentence.
- SECTION 087100, DOOR HARDWARE, delete in its entirety. A new SECTION 087100, DOOR HARDWARE has been added and is attached as part of this addendum. This revised section incorporates all previous addenda items. (14)

**The bid date remains Wednesday, January 22, 2014 at 2:00pm by this addendum.**

The addendum consists of sixteen (16) pages of 8½” x 11” text.

End of Addendum #5

Requests For Information #1  
Windermere School, Ellington  
FROM: AES Remedial Contracting  
DATE: 1/9/2013

#### Asbestos Abatement Related Questions

1. Spec Section 029500 3.11 A indicates that windows have toxic levels of lead and asbestos caulk & putty. I assume this is a typo. Please clarify. **–Yes this is typo. Please refer to Addendum for revision.**
2. Will there be any alteration to the structure (steel I-beams and columns) in the 1955 Wing that would require lead paint removal? If so which contractor is responsible for this? **–There will not be any lead paint removal from the beams or columns. The wording is more of an awareness that there is toxic levels of lead paint on the beams and columns in the '55 wing.**
3. Abatement Area #2 – the demolition drawing shows demolition of window wall system (caulk/glazing) note 4 on the demolition drawing. The caulk/glazing has not been sampled for asbestos (hazardous material survey). Will these materials be considered asbestos for the bid? **–No asbestos in the window glazing/caulk in the window wall to be demolished by the office.**

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 the following:
  - a. Swinging doors.
- 2. Cylinders for door hardware specified in other Sections.

B. Related Sections:

- 1. Section 081113 "Hollow Metal Doors and Frames" for door silencers provided as part of hollow-metal frames.
- 2. Section 081416 "Flush Wood Doors".
- 3. Section 083113 "Access Doors and Frames".

1.3 ACTION 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. 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. 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 under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Manufacturer, Installer and Supplier.
- B. 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.
- C. Warranty: Special warranty specified in this Section.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule. Include name, address and contact information of the manufacturers providing the hardware and their nearest service representatives.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Engage qualified manufacturers with a minimum five (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.
- B. Installer Qualifications: Installer of products and an employer of workers trained and approved by product manufacturers, with a minimum three (3) years document experience installing both standard and electrified builders hardware similar in material, design and extent to that indicated for this Project whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum of five (5) years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design and extent to that indicated for this Project. 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.
  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.
- D. Source Limitations: Obtain each type of door hardware from a single manufacturer.
1. Electrified modification or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. 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.
- F. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet 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. at the tested pressure differential of 0.3-inch wg of water.
- G. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- H. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and 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.
  2. Comply with the following maximum opening-force requirements:
    - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
    - b. 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 ½ inch high.
  4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least three (3) seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.
- I. Keying Conference: Conduct conference at Project site." In addition to Owner, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware 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.

J. 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. Review required testing, inspecting, and certifying procedures.

#### 1.7 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 Owner by registered mail or overnight package service.

#### 1.8 COORDINATION

- A. 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.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- C. 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.

#### 1.9 WARRANTY

- A. General Warranty: 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.
- B. 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: One (1) year from date of Substantial Completion, unless otherwise indicated.
  - a. Manual Closers: Twenty-five (25) years from date of Substantial Completion.
  - b. Bored Locks and Latches: Seven (7) years from date of Substantial Completion.

#### 1.10 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 (6) 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 in Part 3 "Door Hardware Schedule" Article 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, where allowed.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:
  - 1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.

#### 2.2 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
  - 1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
    - a. Two (2) Hinges: For doors with heights up to 60 inches.
    - b. Three (3) Hinges: For doors with heights 61 to 90 inches.
    - c. Four (4) Hinges: For doors with heights 91-120 inches.
    - d. For doors with heights more than 120 inches, provide four (4) hinges, plus one (1) hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
  - a. Widths up to 3'-0": 4½ inches, standard or heavy-weight as specified.
  - b. Sizes from 3'-1" to 4'-0": 5 inches, standard or heavy-weight as specified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
  - a. Exterior Doors: Heavy-weight, non-ferrous, ball bearing or oil impregnated bearing hinges.
  - b. Interior Doors: Standard-weight, steel, ball bearing or oil impregnated bearing hinges.
4. Hinge Options:
  - a. 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 following applications:
    - 1) Out-swinging exterior doors.
    - 2) Out-swinging access controlled doors.
    - 3) Out-swinging lockable doors.
5. Basis of Design:
  - a. Stanley Commercial Hardware; Div. of The Stanley Works; **CB179**
6. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Bommer Industries
  - b. Hager Companies
  - c. McKinney Products Company; an ASSA ABLOY Group company
  - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

### 2.3 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in Part 3 "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 ½-inch latchbolt throw.
  2. Mortise Locks: Minimum ¾-inch latchbolt throw.
- C. Lock Backset: 2¾ inches, unless otherwise indicated.
- D. Lock Trim:
  1. Levers: Cast.
  2. Escutcheons (Roses): Wrought.

3. Dummy Trim: Match lever lock trim and escutcheons.
  4. Operating Device: Lever with escutcheons (roses).
- E. Strikes: BHMA A156; 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: Provide manufacturer's special strike box fabricated for aluminum framing.
- F. Bored Locks: BHMA A156.2; Grade 1; Series 4000. Lock chassis fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application. Locks are to be non-handed and full field reversible.
1. Basis of Design (to match existing but at minimum)
    - a. Schlage Commercial Lock Division; an Ingersoll-Rand company; **ND Series – Rhodes, Vandlgard** functions
  2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Corbin Russwin Architectural Hardware; n ASSA ABLOY Group Company
    - b. Medeco Security Locks, Inc.; an ASSA ABLOY Group company
    - c. SARGENT Manufacturing Company; an ASSA ABLOY Group company; **10 Line Series**
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.4 LOCK CYLINDERS

- A. Patented Cylinders: BHMA A156.5; Grade 1; certified cylinders employing a utility patented and restricted keyway requiring the use of patented controlled keys. Provide bump resistant, fixed core cylinders as standard with solid recessed cylinder collars. Cylinders are to be factory keyed where permanent keying record will be established and maintained.
1. Provide a 6-pin multi-level master key system comprised of patented controlled keys and security and high security cylinders operated by one (1) key of the highest level. Geographical exclusivity to be provided for all security and high security cylinders and UL 437 certification where specified.
    - a. Level 1 Cylinders: Provide utility patented controlled keyway cylinders that are furnished with patented keys available only for authorized distribution.
    - b. Level 2 Cylinders: Provide utility patented controlled keyway and side bar locking incorporating unique angled bottom pins for geographical exclusivity. Cylinders constructed to provide protection against bumping and picking.
    - c. Level 3 Cylinders: Provide utility patented controlled keyway and side bar locking incorporating unique angled bottom pins for geographical exclusivity. Cylinders

to be UL 437 certified and constructed to provide protection against bumping, picking and drilling.

- B. Source Limitation: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
  - 1. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  - 2. Bored-Lock Type: Cylinders with tailpieces to suit locks.
  - 3. Collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  - 4. Keyway: Match Facility Restricted Keyway.
- D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
  - 1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturer's cylinders.

## 2.5 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
  - 1. Master Key System: Cylinders are operated by a change key and master key.
  - 2. Grand Master Key System: Cylinders are operated by a change key, a master key and a grand master key.
  - 3. Great-Grand Master Key System: Cylinders are operated by a change key, a master key, a grand master key, and a great-grand master key.
  - 4. Existing System: Master key or grand master key locks to Owner's existing system.
  - 5. Keyed Alike: Key all cylinders to same change key.
- B. Keys: Nickel-silver large bow.
  - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
    - a. Notation: "DO NOT DUPLICATE."
  - 2. Quantity: Provide the following minimum number of keys:
    - a. Top Master Key: One (1).
    - b. Change Keys per Cylinder: Two (2).
    - c. Master Keys (per Master Key Group): Two (2).
    - d. Grand Master Keys (per Grand Master Key Group): Two (2).
    - e. Construction Keys (where required): Ten (10).
    - f. Construction Control Keys (where required): Two (2).
    - g. Permanent Control Keys (where required): Two (2).

- C. Construction Keying: Provide construction master keyed cylinders or temporary keyed construction cores where required. Provide construction master keys in quantity as required by Contractor. Replace construction cores with permanent cores. Furnish permanent cores for installation as directed in keying conference.
- D. Key Registration List: Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

## 2.6 SURFACE CLOSERS

- A. General: Door closers to be from one (1) 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.
  - 1. Door closers are to be mounted on the least conspicuous side of the door. The hardware supplier shall consult with the Architect to verify applications, and note mounting locations on the hardware schedule.
- B. Standards: Closers to comply with UL 10C and UBC 7-2 for Positive Pressure Fire Test and UL listed for use of fire rated doors.
- C. Surface Closers: BHMA A156.4; Grade 1; 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. Basis-of-Design Product:
    - a. LCN Closers; an Ingersoll-Rand company; **4040 Series**
    - b. No substitutions.
  - 2. Door closers, marked closer, shall be **Smoothee** series, with delayed action cylinder, sized to the door leaf size.
  - 3. Door closers, marked closer/stop shall be **Cush-N-Stop** series, with delayed action cylinder, sized to the door leaf size.

## 2.7 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16, Grade 1; polished cast brass, bronze, or aluminum base metal.
  - 1. Basis-of-Design Product:
    - a. IVES Hardware; an Ingersoll-Rand company; **407 and 436 or 438**
      - 1) Provide wall bumpers wherever possible. Provide floor stops where the use of wall bumpers is not feasible, provided the location of the stop is not a stumbling hazard or would cause the door to rack at the hinges.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Rockwood Manufacturing
  - b. Trimco
  - c. Substitutions: In accordance with Section 012500 “Substitution Procedures”.

## 2.8 SMOKE SEALS (SMOKE AND FIRE RATED DOORS)

- A. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke ratings indicated, based on testing according to UL 1784.
  1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- B. 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.
  1. Provide intumescent seals as indicated to meet UL 10C Standard for Positive Pressure Fire Tests of Door Assemblies and UBC 7-2, Fire Test of Door Assemblies.
- C. General: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
  1. Basis-of-Design Product:
    - a. Pemko Manufacturing Co.; an ASSA ABLOY Group company
      - 1) Smoke Rated Doors: **S88D** at the jambs and heads.
      - 2) Fire Rated Doors: Provided by the door manufacturer.
  2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Reese Enterprises, Inc.
    - b. Zero International
    - c. Substitutions: In accordance with Section 012500 “Substitution Procedures”.

## 2.9 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch-thick stainless steel; beveled on four (4) edges; with manufacturer's standard machine or self-tapping screw fasteners.
  1. Kick Plates: 16 inches high.
  2. All plates are 2 inches less width of door on single doors, 1 inch less width of door on pairs.
  3. Basis-of-Design Product:

- a. Burns Manufacturing Incorporated
- 4. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Rockwood Manufacturing Company
  - b. Trimco
  - c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

## 2.10 FABRICATION

- A. 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.
- B. 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; use threaded-to-the-head wood screws for wood doors and 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."

## 2.11 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. Notify Architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. 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. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - 3. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- 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. 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. Stops: Provide wall or floor stops for doors unless other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

#### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier with perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

#### 3.5 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.

#### 3.6 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.

#### 3.7 DEMONSTRATION

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

#### 3.8 DOOR HARDWARE SCHEDULE

- A. Provide hardware as specified in the previous articles in sets according to the following schedule and as indicated in the Door Schedule on the Drawings.
- B. The hardware supplier shall meet with the Architect and/or Owner to determine lock functions and keying requirements.

**HW-1**

EACH TO HAVE:

- BUTTS
- 1 OFFICE LOCKSET
- 1 CLOSER/STOP
- 1 KICK PLATE
- SMOKE SEALS

DOOR: 105, 106, 107, 108

**HW-2**

EACH TO HAVE:

- BUTTS
- 1 PASSAGE LOCKSET
- 1 CLOSER
- 1 STOP
- 1 KICK PLATE
- SILENCERS

DOOR: 113, 116, 131, 134, 179, 194, 216,  
218, 220, 221

**HW-14**

EACH TO HAVE:

- 1 CLASS. SECURITY LOCKSET
- 1 CLOSER
- 1 KICK PLATE
- BALANCE OF HARDWARE TO REMAIN

DOOR: 228, 229

END OF SECTION 087100