SECTION 00940

ADDENDUM NO. 4
CONTRACT 587-15-C-13 (81)
LOWER HOWARDS CREEK
WATER TREATMENT PLANT
WINCHESTER MUNIPAL UTILITIES
CLARK COUNTY, KENTUCKY

October 20, 2017

The attention of contractors bidding the titled contract is called to the following additions, substitutions, or deletions to the Drawings and/or Specifications.

A. SPECIFICATIONS

1. Section 02610 - Pressure Pipe
   a. In article 3.03 on page 02610 - 49, D.1 add the following:

   “The 24-Inch raw water transmission main from the tie-in point at the proposed WTP site to the tie-in point at the existing WTP shall be flushed using the proposed high service pumps once the new WTP is on-line and ready to send treated water to the City. Flushing will continue until clear water is present at the discharge. Following the flushing operations, the CONTRACTOR shall start the disinfection process. Pigging of the line will not be required.”

1. Section 08710 - Door Hardware
   a. Replace the existing section with Attachment 1.
B. DRAWINGS

1. Drawing Sheet G06 - Geotechnical Information
   a. This sheet is being added to help clarify refusal and bedrock.

Attachment:

Attachment 1 - Spec Section 08710 Door Hardware
Attachment 2 - Sheet G06 - Geotechnical Information

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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. This Section includes the following:

1. Commercial door hardware for the following swinging doors:
   a. Hollow metal.
   b. Aluminum.
   c. Fiberglass reinforced plastic

B. Related Sections include the following:

1. Division 08 Section "Hollow Metal Doors and Frames" for astragals provided as part of fire-rated labeled assemblies and for door silencers provided as part of hollow-metal frames.

2. Division 08 Section “Overhead Coiling Doors” for door hardware provided as part of overhead door assemblies.

3. Division 08 Section “Aluminum-Framed Entrances and Storefronts” for weather seals and thresholds provided as part of aluminum-framed entrance and storefront assemblies.

1.3 SUBMITTALS

A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Samples for Verification: For exposed door hardware of each type, in specified finish, full size, as requested by Architect. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets.

1. 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.
C. Qualification Data:

1. Finish Hardware Installers
   a. Finish hardware, including electrified hardware, for wood, hollow metal, and aluminum doors to be installed by personnel trained and certified by the manufacturer of the product furnished.
   b. Provide manufacturer’s certificates for installer as part of Contractor’s bid information. Failure to supply certificates may result in rejection of bid.

2. Hardware Supplier
   a. Established contract hardware firm which maintains and operates an office, display, and stock in project area and which is a factory authorized distributor of the lock being furnished.
   b. Hardware scheduled and furnished by or under direct supervision an Architectural Hardware Consultant.
   c. All schedules submitted to the Architect for approval and job use must carry the signature and certified seal of this Architectural Hardware Consultant.

3. Architectural Hardware Consultant
   a. Currently certified by the Door and Hardware Institute.
   b. Full-time employee of the Hardware Supplier or an individual having no contractual ties to any supplier/manufacturer entity.
   c. Available at reasonable times to Architect, Owner, and Contractor during course of work.

D. Maintenance Data: For each type of door hardware. Include final hardware schedule, product data sheets, keying schedule, in 3-ring binder, labeled on spine with project name and “Door Hardware”.

E. Warranty: Special warranty specified in this Section.

F. Other Action Submittals:

1. Door Hardware Sets: Prepared by or under the supervision of a DHI certified Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final door hardware sets 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"; other formats will be rejected without review. Double space entries, and number and date each page.

b. Numerical Sequence of Sets and Headings: Submittal headings shall be in exact order as hardware sets in specification: one heading only per set. Submittal set numbers shall relate to specification set numbers, ie. if three headings are required for Set 12 due to door width differences, then the heading numbers should be 12.1, 12.2, and 12.3 or employing similar linking logic.

c. Number of Copies: (5).

d. Content: Include the following information:

1) Identification number, location, hand, fire rating, and material of each door and frame.
2) Type, style, function, size, quantity, and finish of each door hardware item.
3) Complete designations of every item required for each door or opening including name and manufacturer.
4) Degree of opening for closer and overhead stop and holder installation.
5) Keying information.
6) Fastenings and other pertinent information.
7) Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
8) Explanation of abbreviations, symbols, and codes contained in schedule.
9) Mounting locations for door hardware.
10) Notes included with specification hardware sets transcribed verbatim into submittal hardware sets.
11) Door and frame sizes and materials.
12) List of related door devices specified in other Sections for each door and frame.

e. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in 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 sets.

2. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
1.4 QUALITY ASSURANCE

A. Furnish proper hardware types and quantities for door function, hardware mounting and clearances, and to meet applicable codes. Bring discrepancies to the attention of the Architect a minimum of (10) days prior to bid date so that an addendum may be issued. No additional compensation will be allowed after bidding for hardware changes required for proper function, hardware mounting or clearances, or to meet codes.

B. 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.

C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated. If hardware is obtained from more than one supplier, the GC is still responsible for making sure that each product type is by the same manufacturer and series. Storefront hardware must match builder’s hardware. For instance, if the contract hardware supplier furnishes Norton 7500 series closers for the wood and hollow metal doors, then the storefront supplier must furnish Norton 7500 series closers for the aluminum storefront doors; same procedure holds for exit devices, continuous hinges, closers, pivots, pulls, push bars, locksets, and key cylinders.

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.

D. Fire-Rated Door Assemblies: 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 NFPA 252 or UBC Standard 7-2.

1. Test Pressure: After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches (1016 mm) or less above the sill.

E. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Contractor, and Architect, conference participants shall also include Hardware Supplier’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. Address for delivery of keys.
F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Contractor, and Architect, conference participants shall also include Certified Installer, Hardware Supplier’s Architectural Hardware Consultant, and Security Supplier. Review methods and procedures related to electrified door hardware including, but not limited to, the following:

1. Coordinate electrical roughing-in and other preparatory work to be performed by other trades.
2. Review sequence of operation for each type of electrified door hardware.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. 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 related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to Owner by registered mail or overnight package service. Obtain Owner’s contact name and address from Architect.

1.6 COORDINATION

A. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Distribute templates in a timely manner so as not to delay suppliers. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

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 operators and door hardware.

c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
2. Warranty Period: Five years from date of Substantial Completion, except as follows:
   a. 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 as needed 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 hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

Products and manufacturers are not limited to any listed below. "Equal" products will be considered. Manufacturers wishing to have products considered, please submit product literature to architect ten days prior to bid.

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in this and door hardware sets indicated in Part 3 "Door Hardware Sets" Article.

   1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.

   2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

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 Sets" 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 Sets" Article.

   2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.

C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include manufacturers specified.

2.2 BUTT HINGES, GENERAL

A. Quantity: Provide the following, unless otherwise indicated:
   1. Two Hinges: For doors with heights up to 60 inches (1524 mm).
   2. Three Hinges: For doors with heights 61 to 90 inches (1549 to 2286 mm).
   3. Four Hinges: For doors with heights 91 to 120 inches (2311 to 3048 mm).
   4. For doors with heights more than 120 inches (3048 mm), provide 4 hinges, plus 1 hinge for every 30 inches (750 mm) of door height greater than 120 inches (3048 mm).

B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

C. Hinge Height, Width, and Weight: Unless otherwise indicated, provide the following:
   1. Doors 3’6” or more in width: 5” high, heavy-weight hinges.
   2. Doors less than 3’6” in width: 4-1/2” high, standard-weight hinges.
   3. Width: 4-1/2” heavy-weight, 4” standard-weight, unless proper clearance requires a different width.

D. Hinge Base Metal: Unless otherwise indicated, provide the following:
   1. In-swinging restroom door hinges and balance of door hinges: Stainless steel, with stainless-steel pin.
   2. Interior office area door hinges: Steel, with steel pin.

E. Hinge Options: Provide 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 reverse bevel lockable doors.
   2. Corners: Square.
   3. Number of knuckles: Five.

G. Fasteners: Comply with the following:

2. Wood Screws: For wood doors and frames.

3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.


Template Hinge Dimensions: BHMA A156.7.

H. Available Manufacturers:


2. Hager Companies (HAG).

3. McKinney Products Company; an ASSA ABLOY Group company (MCK).

4. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

5. AUB, Inc. (AUB)

2.3 LOCKS AND LATCHES, GENERAL

A. Accessibility Requirements: Where indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

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 N).

B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation. C. Lock Trim:

1. Levers: Cast.
   
   a. Yale CR model with full angled return.

2. Dummy Trim: Match lever lock trim and roses.

3. Lockset Designs: Provide design indicated in hardware sets, or, if sets are provided by another manufacturer, provide designs that match those designated.

D. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.


3. Deadbolt Lock: Minimum 1 inch (25 mm) throw.

E. Backset: 2-3/4 inches (70 mm), 2 piece anti-friction latchbolt, unless otherwise indicated.

F. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:

1. Strikes for Bored Locks and Latches: BHMA A156.2.

2. Strikes for Mortise Locks and latches: BHMA A156.13

2.4 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:

1. Bored Locks: BHMA A156.2.

B. Bored Locks: BHMA A156.2 Grade 1.

1. Available Manufacturers:


   b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).

   c. Hager. (HAG).

   d. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).

   e. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).

   f. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

C. Compatibility with Key Cylinders: fully warranted for use with key cylinder furnished.

2.5 DOOR BOLTS

A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Surface Bolts: Minimum 1-1/8-inch (29-mm) throw.

B. Surface Bolts: BHMA A156.16, Grade 1.
1. Flush Bolt Heads: Minimum of 1/4-inch-(6mm) x 1/2-inch- (13-mm-) bolts of stainless steel with minimum 12-inch- (305-mm-) long rod for doors up to 84 inches (2134 mm) in height. Provide longer rods as necessary for doors exceeding 84 inches (2134 mm).

2. Available Manufacturers:
   a. Door Controls International (DCI).
   b. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
   c. Hager Companies (HAG).
   d. IVES Hardware; an Ingersoll-Rand Company (IVS).
   e. McKinney Products Company; an ASSA ABLOY Group company (MCK).
   f. Rockwood Manufacturing Company (RM).
   g. Trimco (TBM).

C. Flush Bolts
   1. U.L. listed.
   2. Forged brass construction, 1/2" diameter flattened bolt tip, 12" long rod.
   3. Fit standard ANSI door preparation.

D. Automatic Flush Bolts
   1. U.L. listed.
   2. Forged brass or stainless steel construction, 1/2" diameter flattened bolt tip, 12" long rod.
   3. Fully automatic.
   4. Operation shall incorporate an override function.
   5. Tested for a minimum of 100,000 cycles.
   6. Provide dust proof strikes.
   7. Acceptable manufacturers: Glynn-Johnson, Hager Hardware, and H.B. Ives

2.6 EXIT DEVICES

A. Exit Devices: BHMA A156.3, Grade 1.
B. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

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 N).

C. Exit Devices for Means of Egress Doors: Comply with NFPA 101. Exit devices shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

D. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.

E. Fire Exit Devices: Devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.

F. Outside Trim: As specified in hardware sets; material and finish to match locksets, unless otherwise indicated.

1. Match design for locksets and latchsets, unless otherwise indicated.

H. Fasteners. Manufacturer’s standard, except furnish sex bolts for attachments to doors.

I. Shims: Provide shims if needed for clearance.

J. Available Manufacturers:

1. Detex, Inc. (DTX)

2. Precision Hardware, Inc. (PH).

K. Single/Active doors: mortise type.

L. Double doors: Concealed vertical rod.

M. ANSI Function 08

2.7 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5, Grade 1.

B. Cylinders: Provide cylinders for all devices requiring key cylinders to properly function: constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Six.
2. Keyway: Standard Best; as directed by Owner.

3. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.

4. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.

5. Bored-Lock Type: Cylinders with tailpieces to suit locks.

C. Permanent Cores: Manufacturer’s standard; finish face to match lockset; complying with the following:

1. Small-format Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

D. Construction Keying: Comply with the following:

1. Construction Cores: Provide keyed brass construction cores that are replaceable by permanent cores for locking devices on exterior doors. Provide 6 construction master keys.
   a. Replace construction cores with permanent cores as directed by Owner.

D. Supplemental Items: Provide cylinder spacers, collars, and correct cams as needed for proper function of locking devices.

F. Available Manufacturers:

2. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).
3. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).
4. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).
5. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

2.8 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:
1. Match existing Grand Master Key System: Cylinders are operated by a change key, a master key, a grand master key, and a great-grand master 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: Provide the following:
   b. Master Keys: Six per master.
   c. Grand Master Keys: Six.
   d. Control Keys: Two.
   e. Construction Control Keys: Two.
   f. Blanks: Twenty.

C. Provide a key schedule showing all key numbers and spaces to which each permits entry. The schedule and key cabinet, along with key gathering envelopes containing keys for each lock endorsed with lock number and space designation, shall be turned over to the Owner. Install keys with proper tags in the key cabinet. Establish a construction master key, and apply to locks and cylinders, except for closets, within major spaces. Locks for closets shall be shipped unlocked and the keys delivered to the Owner with the balance of the keys.

D. Key Cabinet

1. Provide a wall mounted key cabinet with baked enamel interior finish and exterior prime coat with cylinder keyed to project master key system. Cabinet shall accommodate all keys in the project, plus twenty (20) percent additional.
   a. Provide cabinet with key control system consisting of permanent key markers, temporary key markers, "out" key control tags, and cross indexing cards. Instruct Owner personnel how to use system.
   b. Acceptable Manufacturers: Yale, Bommer

2.9 SURFACE CLOSERS

A. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural &

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Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

1. 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. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

C. Fasteners: Manufacturer’s standard for arms, shoes and brackets. Sex bolts for fastening closers to doors.

D. Mounting Accessories: Provide shoes, brackets, drop plates, spacers, etc., as needed for proper mounting of closers and arms to door and frame.

E. Spring Size of Units: Provide field-sizeable closers, adjustable for spring sizes 1-6, plus 50% extra spring power at spring size 6, to meet field conditions and requirements for opening force.

F. Cylinders: 1-1/2" minimum diameter; cast iron or aluminum.

G. Backcheck intensity and location valves.

H. Delayed action closing.

I. ANSI 156.4 Grade 1

J. Mechanical hold open device except at fire rated doors.

K. Mounting Configuration: Unless otherwise indicated by model number in the hardware sets:
   1. Do not furnish closers capable of being mounted on the corridor side of doors.
   2. Do not furnish regular arm closers in areas accessible to students.
   3. If tri-pack closers are furnished for regular arm applications, remove parallel arm shoe from closer box before delivering to job.
   4. Parallel Arm closers are to be manufacturer’s double forged rigid models.

H. Available Manufacturers:
   1. LCN Closers; an Ingersoll-Rand Company (LCN).
2. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).

3. Stanley Commercial Hardware; Div. of The Stanley Works.


5. Hager.

2.10 PROTECTIVE TRIM UNITS A.

Size:

1. Width
   a. Singles, and pairs with removable mullions or surface applied astragals: 2 inches (38 mm) less than door width on push side and 1 inch (13 mm) less than door width on pull side
   b. Other pairs: 1 inch (13 mm) less than door width

2. Height: as specified in door hardware sets; or, if constrained by door bottom rail height, 1" less bottom rail height.

B. Fasteners: Manufacturer’s machine or self-tapping countersunk screws.

C. Metal Protective Trim Units: BHMA A156.6; beveled 4 sides; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel. D.

Available Manufacturers:

1. Hager Companies (HAG).

2. IVES Hardware; an Ingersoll-Rand Company (IVS).

3. McKinney Products Company; an ASSA ABLOY Group company (MCK).


5. Trimco (TRI).

2.11 MECHANICAL WALL AND FLOOR STOPS AND HOLDERS A.

Stops and Bumpers: BHMA A156.16, Grade 1.

1. Provide wall stops for doors unless floor, overhead, or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic. Provide floor stops (and spacers if needed) of proper height and configuration to accommodate floor condition. Where floor or wall stops are not appropriate, provide overhead holders.
2. Properties. Cast construction with fastener suitable for wall or floor condition.

3. Available Manufacturers:
   a. Hager Companies (HAG), model 267F.
   b. IVES Hardware; an Ingersoll-Rand Company (IVS), model 494.
   c. McKinney Products Company; an ASSA ABLOY Group company (MCK).
   d. Rockwood Manufacturing Company (RM).
   e. Glynn-Johnson, model FB36.
   f. Trimco (TRI).

B. Wall-mounted Combination Door Stops and Holders: BHMA A156.16, Grade 1.

1. Properties: Heavy cast with adjustable holding force, self-compensating for changes up to ¼” in vertical door position. Provide flush spacers finished to match adjoining substrates for clearance as needed.

2. Manufacturer and Model: Trimco 1283 or approved equal.

2.12 OVERHEAD STOPS AND HOLDERS

A. BHMA A156.8, Grade 1. Template for maximum degree of opening before encountering obstruction. B. Available Manufacturers:

1. Architectural Builders Hardware Mfg., Inc. (ABH).
2. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
3. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).
4. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).

2.13 SILENCERS

A. Silencers for Metal Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame.

B. Available Manufacturers:

1. Glynn-Johnson; an Ingersoll-Rand Company (GJ), model 64 or 65.
2. Hager Companies (HAG), model 307D or 308D.
3. IVES Hardware; an Ingersoll-Rand Company (IVS), model 20 or 21.

4. McKinney Products Company; an ASSA ABLOY Group company (MCK).

5. Rockwood Manufacturing Company (RM).

6. Trimco (TRI).

2.14 DOOR GASKETING

A. General: Provide continuous weather-strip gasketing on exterior hollow metal doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners as indicated by models in hardware sets.

1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

3. Mullion Gasketing: Fasten to mullions, forming seal when doors are closed.

4. Sweeps: Apply to bottom of in-swinging hollow metal doors, forming seal with threshold when door is closed.

5. Seals integral to threshold at out-swinging exterior hollow metal doors.

B. Requirements per type of rated door provided (these requirements supersede models indicated in hardware sets):

1. Category A wood doors: provide models indicated in hardware sets.

2. Category B wood doors: provide NGP 9550 (or approved equal) Category G&H seals at jambs and meeting edges. If sound seals are indicated in hardware sets, provide the 9550 seals in addition to the sound seals.

3. Category A and B hollow metal doors: provide models indicated in hardware sets.

C. 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.

D. 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-control ratings indicated, based on testing according to UL 1784.

1. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.

E. 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 NFPA 252 or UBC Standard 7-2.
1. Test Pressure: After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches (1016 mm) or less above the sill.

F. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.

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

H. Gasketing Materials:
   1. Adhesive Seals. As specified in hardware sets or approved equal.
   2. Intumescent. As required.
   4. Panic type thresholds. Neoprene or polyprene.

I. Available Manufacturers:
   1. Hager Companies (HAG).
   2. National Guard Products (NGP), model 190.
   4. Reese Enterprises (RE).
   5. Zero International (ZI), model 328

2.15 THRESHOLDS

A. Standard: BHMA A156.21

B. Accessibility Requirements: Where thresholds are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

   1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

D. Fasteners: ¼-20 machine screws and expansion anchors.

E. Gasketing material: At panic-type thresholds: neoprene or polyprene.
F. Width: 6 inches unless shown otherwise on drawings

G. Material: Aluminum except for fiberglass reinforced plastic for FRP doors and frames

H. Available Manufacturers:
   1. Hager Companies (HAG).
   2. National Guard Products (NGP).
   4. Reese Enterprises (RE).
   5. Zero International (ZRO).

2.16 Push Plates and Pulls
   1. Push and pull plates: 4"x16"x0.050" stainless steel.
   2. Pulls: through bolted, 1" diameter, 2 1/2" projection, 12" centers, stainless steel.

2.17 Coordinator
   1. U.L. labeled and tested for 100,000 cycles.
   2. Stop mounted, provide filler strips to fully cover stop.
   3. Adjustable holding power and override feature.

2.18 Kick Plates
   1. Stainless steel, 0.050" thick, beveled 3 sides, 8" high, 2 inches wide less than door width.

2.19 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, 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. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

C. Fasteners: Manufacturer’s standard, except as noted in product sections of this specification.

2.20 FINISHES

A. Standard: BHMA A156.18, as indicated in door hardware sets.

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 door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: Comply with DHI A115 Series.

1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.


B. Mounting Locations:

1. Floor Stops and Holders: Locate at least 20" out from hinge edge of door for maximum degree of opening before door encounters obstruction.
2. Wall Stops: Locate so that lockset spindle and wall stop share horizontal and vertical centerlines.

3. Wall Stop/Holders: Locate 4” down and in from top lock-edge corner of door w/holder slot at bottom of unit.

4. Closers and Overhead Stop/Holders: Template and mount closers and overhead stops for maximum degree of opening before door encounters obstruction. When used with closers, template and locate overhead stops so that closer arm does not fully extend and bottom out.

C. 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.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

3.4 FIELD QUALITY CONTROL

A. Provide Door Hardware Inspection Services and Field Quality Report as indicated below.

B. Door Hardware Inspection Services

1. Scope

   a. Inspection of all swinging doors and door hardware immediately following completion of installation.

   b. Inspector to furnish a Field Quality Report, itemized per each individual opening, to the Architect within 7 days of the inspection, including:

      1) deficiencies in workmanship and standard industry practices,
      2) use of allowable products,
      3) use of manufacturer recommended fasteners,
      4) compliance with the ADA,
      5) proper door/frame/hardware clearances,
      6) problems related to function, security, aesthetics or maintenance.
c. Payment to be made directly from GC to Inspector within 30 days of invoice. Re-inspections at additional fee until all problems are resolved.

2. Inspector Qualifications

   1) Certified Architectural Hardware Consultant.
   2) Entirely independent of the supply side of the project, having no familial or financial relationship with any manufacturer, manufacturer’s representative, distributor, installer or supplier used on this project.
   3) Approved by Architect. Architect may be contacted for list of approved AHC Inspectors.

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.

B. Overhead Stops/holders: Set adjustable stops for maximum degree of opening before door encounters obstruction. Adjust friction to control door.

C. Wall and Floor Mounted Stop/holders: Adjust holding force with spanner head wrench so that door is held securely, yet is easy to pull out of hold open. D. Door Closers:

1. Unless otherwise required by authorities having jurisdiction, adjust sweep period 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.

2. Adjust latch period so that door does not slam nor injure fingers.

3. Adjust spring power so that door properly latches.

4. Adjust back check to slow door down before hitting stop point so as to prevent damage to closer, arm, door, frame, and fasteners.

E. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

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 DOOR HARDWARE SETS

### Hardware Set 01 – Entrance - Door 800A
- Butt Hinges: BB5006-454
- Panic Device, Rim, 08: 40xW08D-CD
- Rim Cylinder: SFIC-6P
- Mortise Cylinder: SFIC-6P
- Closer, w/ Spring Stop: CPS7500
- Overhead Rain Drip: 16A
- Cat H Adhesive Jamb Seal Set: 105
- Panic Threshold: 896N x RCE
- Weatherstripping: 628
- Door Bottom Seal: NGP

### Hardware Set 02 – Entrance – DBL Door 201
- Butt Hinges: BB5006-454
- Panic Device, Rim, 08: 8208D-CD
- Rim Cylinder: SFIC-6P
- Mortise Cylinder: SFIC-6P
- Closer, w/ Stop Each Leaf: CLP7500SS
- Overhead Rain Drip: 16A
- Cat H Adhesive Jamb Seal Set: 105
- Panic Threshold: 896N x RCE
- Weatherstripping: 628
- Astragal
- Coordinator
- Door Bottom seal

Provide padlocks for overhead doors, remainder of hardware by door manufacturer.

### Hardware Set 04 – Entrance – DBL Door 301A, 302A, 703A
- Butt Hinges: BB5006-454
- Panic Device: 50xW08D-CD
- Mortise Cylinder: SFIC-6P
- Overhead Rain Drip: 16A
- Cat H Adhesive Jamb Seal Set: 105
- Panic Threshold: 896N x RCE
- Weatherstripping: 628
- Astragal
- Kick Plates: K0050 8 x 2LDW x CS x B4E
- Door Bottom Seal: 630

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<td>Office Lock</td>
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## Hardware Set 10 – Passage - Door 800C

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## Hardware Set 11 – Storeroom - Door 203A, 207, 805

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## Hardware Set 12 – Privacy - Door 206

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<td>Cylinder x Thumb Turn Deadbolt</td>
<td>1809-4 x RC x CFC</td>
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<td>Push Plate</td>
<td>1014-3B x RC x CFT</td>
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<td>Pull Plate</td>
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