

**CITY OF WINFIELD
PUTNAM COUNTY, WEST VIRGINIA**

CONTRACT NO. 1 – WASTEWATER TREATMENT PLANT IMPROVEMENTS

JANUARY 29, 2020

ADDENDUM NO. 3

To whom it may concern:

A. BOILER PLATE

1. Bid Opening for Contract #1 **HAS BEEN MOVED TO** February 11, 2020 at 2:00 p.m. at the City of Winfield, 12448 Winfield Road, Winfield, WV.

B. SPECIFICATIONS

1. **REMOVE** Section 087100 – “Door Hardware” in its entirety and replace with the attached Section 087100 – “Door Hardware.”

C. DRAWINGS

1. **ADD** Sheet 3D.
2. **DELETE** Sheet 6G in its entirety and **REPLACE** with the attached Sheet 6G.
3. **DELETE** Sheet 7G in its entirety and **REPLACE** with the attached Sheet 7G.
4. **DELETE** Sheet SE1 in its entirety and **REPLACE** with the attached Sheet SE1.

D. QUESTIONS AND CLARIFICATIONS

The following are clarifications and responses to questions posed by Contractors and suppliers regarding the above referenced project.

1. **Clarification:** Substantial Completion will be issued when the proposed wastewater treatment plant is fully operational and the Winfield Way Lift Station rehabilitation is completed.
2. **Clarification:** Enirodyne Systems Inc. has been named as a qualified manufacturer on the grit removal equipment in Specification 461216 – “Grit Removal Equipment”.
3. **Question:** Please Provide a better explanation of SC-6.05A.15 “Owner’s loss of profits and soft cost coverage... fixed expenses and debt service...” or provide a dollar amount of coverage so it can be covered.

Answer: SC-6.05A.15 has been removed from the Supplementary Conditions

4. **Question:** On note 2 on Sheet 6G, what is meant by double insulation?

Answer: Note 1 on Sheet 6G has been revised. A copy of revised Sheet 6G is attached to this Addendum.

5. **Question:** Note 2 on Sheet 6G states that all doors are to receive push pull plates. In Section 087100 Part 3.8A, there is a HDW set 1 listed. Are the interior doors to receive HDW set 1 and the interior receive push/pulls in lieu of the lockset?

Answer: Sheet 6G and 7G along with Specification 087100 "Door Hardware" have been revised to clarify the door hardware required. Revised Sheet 6G and 7G as well as revised Specification 087100 are attached to this Addendum.

6. **Question:** Is this keyed system to be tied into an existing system?

Answer: No.

7. **Question:** Are no doors rated on this project?

Answer: All doors are rated.

8. **Question:** There are 2 double door openings. Section 087100 Part 3.8.A does not include hardware for a complete double door opening.

Answer: Sheet 6G and 7G along with Specification 087100 "Door Hardware" have been revised to clarify the door hardware required. Revised Sheet 6G and 7G as well as revised Specification 087100 are attached to this Addendum.

9. **Question:** Is this to be a conventional keyed system or interchangeable core?

Answer: Conventional.

10. **Question:** What is the throughput requirement of the belt press?

Answer: 1,280 pounds of dry solids per hour, 170 GPM.

11. **Question:** Please confirm that the polymer system is to be capable of preparing up to 1,800 gallons per hour of polymer solution.

Answer: The specification for the polymer system is made to cover any belt press manufacturer or sludge type. The polymer system shall be sized to adequately supply the belt press with enough polymer to optimize dewatering.

12. **Question:** Are the two (2) 12" plug valves (future) with extension stems and floor stands located in the digester basin at elevation 564.00 located on 5A and 5B to be furnished and installed in this contract? Or are they to be installed in future contracts?

Answer: The two (2) 12" plug valves are to be supplied and installed in this contract.

13. Question: Generator Specification 263213, 1.6.B.1, indicates warranty coverage of 5 years. Is this to cover parts, labor and travel expense, or just parts and labor?

Answer: Yes.

14. Question: Drawing 2-C shows 22' opening Automatic Gate. What type of slide gate is required? Drawing DET-3 Shows an aluminum frame, internal roller slide gate. Drawing DET-4 Shows a steel frame external roller slide gate.

Answer: A Steel Frame External Roller Slide Gate is acceptable as shown on DET-4.

15. Question: Is access control to the gate included in Bid? If so, what are the access control system components and where are they located?

Answer: Yes. Sheet SE1 Equipment Note 14 shows the gate keypad.

16. Question: 034100-2 B1 states a 16" minimum thickness for the wall thickness. Is there an variance in wall thickness allowed if the structural and buoyancy calculations can show a thinner wall thickness meets the ACI-350?

Answer: Yes.

17. Question: 034100-4 1.6 B. The pre-approval time is 15 days prior to bid. This new spec came out today not allowing for the alternate approval. Does this disqualify Mack from bidding?

Answer: No.

18. Question: 034100-4 1.6 C 1 states the alternative tank manufacturer shall document having 25 consecutive years' experience in designing, manufacturing, and installing tanks of similar arrangement, size, and complexity using a fully compliant ACI 350 pre-cast, post-tension system. Does this disqualify Mack from bidding?

Answer: No.

19. Question: 034100-4 1.6 C3 Mack does not have a full time engineer on staff for post tension structures of this type. Mack uses outside structural engineers registered in the State of WV. That provides an independent engineers design not tied to Mack to insure the integrity of the design. Does this disqualify Mack from bidding?

Answer: No.

20. Question: 34100-4 1.6 C3, 4, 5, 6, 7. Is this standard being accessed also to the cast in place bids?

Answer: No.

21. Question: Sheet 2A (and others) show an existing 48" CPP line running from the main road towards the river on what will be East side of the new SBR basin. What is the depth and condition of this pipe? Is it safe to cross that line with the construction traffic that this project will see?

Answer: The existing 48" CPP line has approximately 8 feet of cover and should be safe to cross with construction traffic.

- 22. Question:** Would mill finish be acceptable for the aluminum grating? Also, would mill finish be acceptable for the hatches?

Answer: Yes. Mill finish is acceptable for both grating and hatches.

- 23. Question:** Specification 083500 – Access Hatches: They are calling for Series S1R hatches. In paragraph 2.3 you are asking for a channel frame and spring assist. These are not available for the S1R hatches. Please clarify.

Answer: Provide S1R hatches. Channel frame and spring assist are not required.

- 24. Question:** Please detail stairs from SBR to sidewalk.

Answer: See Sheet S4 in Addendum #2.

- 25. Question:** Please detail headworks stop plates and/or frame

Answer: See Sheet 3D attached to this addendum.

- 26. Question:** On the electrical drawings there are RTU's labeled. This doesn't seem to coordinate with the SBR spec. Please provide specs/wiring and clarify what functions RTU-1, RTU-2, and RTU-3 are to perform.

Answer: RTU-3, located in the UV Building, should collect information from the UV equipment and non-potable water system and communicates the information to RTU-2 located at the Headworks Structure. RTU-2 collects information from the headworks equipment and communicates the information from RTU-3 and the headworks to RTU-1 located in the Electrical Room in Office/Sludge Building. RTU-1 collects information from the automatic transfer switch and the plant pump station control panel and communicates the information from RTU-2, RTU-3, the automatic transfer switch, and the plant pump station to the SBR control panel. These connections are illustrated on the Control Riser Diagram on Plan Sheet E9.

- 27. Question:** Please provide intent for the 3 EA chart recorders on E3. The two flow meters specs just list a 10" chart recorder and doesn't really schedule clearly. Is there one for Influent FM, Plant PS FM, & Effluent FM?

Answer: Yes. There is a chart recorder for the Influent Pump Station forcemain, Plant Pump Station forcemain, and the Effluent V-notch weir to keep track of flows throughout the plant.

- 28. Question:** Specification 432520.01 lists the PS as Winfield Way & High School Pump Station. Are these one and the same?

Answer: No. Specification 432520.01 is solely for the Winfield Way Lift Station Rehabilitation.

29. Question: Drawing 2 says refer to drawings 7A for modifications to existing pump station. 7A is the UV building. Please clarify what is to be done with the existing pump station.

Answer: There will be no work performed on to the existing pump station.

30. Question: Pump Station specification 432520.01 & 432540. Are the pump station to run via VFD's or motor starters? Also on 432540 please verify manufacturer names.

Answer: The pump stations are to run via VFDs. The manufacturers shall be Flygt, Meyers, or Engineers approved equal.

31. Question: Non-Potable Water Specification 432560 calls for a booster station control panel and talks about an above ground tank. E4 shows VFD for the pump, a pressure sensor, and transducer. Please clarify how these are to be wired and work. In addition there is a flow meter in this spec. Is it required?

Answer: The Non-Potable Water system is designed to operate with a VFD on the pump that is controlled by the system pressure. During time of usage, the VFD will adjust the operation of the pump to sustain proper system pressure. Pump operation will cease when the system pressure reaches a set pressure. The flow meter is not required.

32. Question: On Drawing 3A there is a screening container shown. Is this by the Owner? If so please describe?

Answer: The screening container will be supplied by Owner.

33. Question: For specification 463332.00 Headworks. How many days of startup and training are required?

Answer: Specification 463332.00 Headworks was removed in Addendum #1 and replaced with Specification 461215 – Pre-Screening Equipment and Specification 461216 – Grit Removal Equipment. Specification 461215 – Pre-Screening Equipment Paragraph 3.4.E requires a minimum of one (1) eight hour day onsite to complete the certifications and training described in the specification. Specification 461216 – Grit Removal Equipment Paragraph 3.4.E requires a minimum of one (1) eight hour day onsite to complete the certifications and training described in the specification.

34. Question: Drawing 7A shows an air compressor. Is this the same one as in Specification 469000 Misc Equipment?

Answer: No. Drawing 7A shows the air compressor that operates the pneumatic functions of the UV units. This air compressor should be included with the UV disinfection equipment and capable of supplying 5.3 CFM (2.5 LPS) @ 65-80 PSI (4.5-5.5 BAR) to the wiping system.

35. Question: Drawing 7A shows 2 EA hoists. Please provide description for these.

Answer: The two hoists shall be Thern 5110 davit cranes or equal. The davit cranes shall be galvanized with manual operators.

36. Question: Drawing SE1 does not have a scale. Please provide a drawing to scale in order to measure conduits, wiring, and concrete encasements for this project.

Answer: Sheet SE1 has been revised and is attached to this Addendum.

37. Question: Drawing 3C shows a carport over the headworks. Please provide dimensions and South/West views so we can determine takeoff.

Answer: See Sheet 3D attached to this addendum.

38. Question: Would vinyl windows be acceptable for the project?

Answer: No.

39. Question: Please provide design operational costs for the belt press and ancillary systems. Also please provide power costs and water costs so we know what to figure on dewatering the sludge.

Answer: Appalachian Electric Power Company's is currently charging the City of Winfield \$0.07/kW Hour and West Virginia American Water is currently charging the City of Winfield \$5.6110 per 1,000 gallons of water used. The cost of polymer will vary depending on the brand of belt press and ancillary systems.

40. Question: Does the office furniture allowance on the bid form include anything that is shown on the contract drawings?

Answer: The furniture allowance covers the items shown in Office 100 and Kitchen 105 on Plan Sheet 6. The furnace allowance does not include PLC/Control Panel and chart recorders shown in Kitchen 105.

41. Question: Specification 033000- "Cast-In-Place Concrete" Part 2.5.A. What is the dosage for microfibers in cast-in-place concrete?

Answer: ASTM C 1229 should be used to determine the dosage of micro fibers in the concrete.

If you have any questions or need any other information, please do not hesitate to contact me.

Sincerely,

THE THRASHER GROUP, INC.


COREY SMITH, PE
Project Manager

Enclosures



4. 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 manufacturer of key control system for subsequent delivery to Owner.
- D. Deliver keys and permanent cores 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. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.9 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. Exit Devices: Three years from date of Substantial Completion.
 - b. Manual Closers: 10 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.

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 named manufacturers' products or Architect Approved 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.
- 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. References to BHMA Designations: Provide products complying with these designations and requirements for description, quality, and function.

2.2 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Baldwin Hardware Corporation.
 - b. Bommer Industries, Inc.
 - c. Hager Companies.
 - d. IVES Hardware; an Ingersoll-Rand company.
 - e. McKinney Products Company; an ASSA ABLOY Group company.
 - f. Stanley Commercial Hardware; Div. of The Stanley Works.

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 latchbolt throw.
 - 2. Mortise Locks: Minimum 3/4-inch latchbolt throw.
 - 3. Deadbolts: Minimum 1-inchbolt throw.
- C. Lock Backset: 2-3/4 inches, unless otherwise indicated.
- D. Lock Trim:
 - 1. Description: As indicated on Drawings.
- E. 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.
- F. Bored Locks: BHMA A156.2; Grade 2; Series 4000.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Arrow USA; an ASSA ABLOY Group company.
 - b. Best Access Systems; Div. of Stanley Security Solutions, Inc.
 - c. Corbin Russwin Architectural Hardware; n ASSA ABLOY Group Company.
 - d. Falcon Lock; An Ingersoll-Rand Company.
 - e. Medeco Security Locks, Inc.; an ASSA ABLOY Group company.
 - f. PDQ Manufacturing.
 - g. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
 - h. Schlage Commercial Lock Division; an Ingersoll-Rand company.
- G. Push-Pull Latches: Bored, BHMA A156.2; Series 4000; Grade 1; with paddle handles that retract latchbolt; capable of being mounted vertically or horizontally.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
 - b. Architectural Builders Hardware Mfg., Inc.

- c. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
- d. Glynn-Johnson; an Ingersoll-Rand company.
- e. IVES Hardware; an Ingersoll-Rand company.
- f. Rockwood Manufacturing Company.
- g. SARGENT Manufacturing Company; an ASSA ABLOY Group company.

2.4 AUXILIARY LOCKS

A. Bored Auxiliary Locks: BHMA A156.5: Grade 1; with strike that suits frame.

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Arrow USA; an ASSA ABLOY Group company.
 - b. Best Access Systems; Div. of Stanley Security Solutions, Inc.
 - c. Falcon Lock; an Ingersoll-Rand company.
 - d. Hager Companies.
 - e. PDQ Manufacturing.
 - f. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
 - g. Schlage Commercial Lock Division; an Ingersoll-Rand company.

2.5 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
 - b. Burns Manufacturing Incorporated.
 - c. Door Controls International, Inc.
 - d. IVES Hardware; an Ingersoll-Rand company.

2.6 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit Devices and Auxiliary Items: BHMA A156.3.

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
 - b. Arrow USA; an ASSA ABLOY Group company.
 - c. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
 - d. DORMA Architectural Hardware; Member of The DORMA Group North America.
 - e. Monarch Exit Devices & Panic Hardware; an Ingersoll-Rand company.
 - f. SARGENT Manufacturing Company; an ASSA ABLOY Group company.

- g. Von Duprin; an Ingersoll-Rand company.

2.7 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.
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Arrow USA; an ASSA ABLOY Group company.
 - b. ASSA, Inc.; An ASSA ABLOY Group Company.
 - c. Best Access Systems; Div. of Stanley Security Solutions, Inc.
 - d. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
 - e. Falcon Lock; an Ingersoll-Rand company.
 - f. Schlage Commercial Lock Division; an Ingersoll-Rand company.
- B. Standard Lock Cylinders: BHMA A156.5; Grade 2; permanent cores that are interchangeable; face finished to match lockset.
- C. High-Security Lock Cylinders: BHMA A156.30; Grade 2; Type E, electrical; permanent cores that are removable; face finished to match lockset.
- D. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- E. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.8 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
 - 1. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.
 - 2. Great-Grand Master Key System: Change keys, a master key, a grand master key, and a great-grand master key operate cylinders.
- B. Keys: Nickel silver.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: Information to be furnished by Owner.
 - 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. Great-Grand Master Keys: Five.

2.9 KEY CONTROL SYSTEM

- A. Key Control Cabinet: BHMA A156.5; metal cabinet with baked-enamel finish; containing key-holding hooks, labels, 2 sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers; with key capacity of 150 percent of the number of locks.
 1. 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. American Key Boxes and Cabinets.
 - b. GE Security, Inc.
 - c. HPC, Inc.
 - d. Lund Equipment Co., Inc.
 - e. MMF Industries.
 - f. Tri Palm International.
 2. Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.

2.10 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; aluminum, unless otherwise indicated.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Burns Manufacturing Incorporated.
 - b. Forms + Surfaces.
 - c. Hager Companies.
 - d. IVES Hardware; an Ingersoll-Rand company.
 - e. Rockwood Manufacturing Company.
 - f. Trimco.

2.11 ACCESSORIES FOR PAIRS OF DOORS

- A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

- B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.
- C. Astragals: BHMA A156.22.

2.12 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. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Arrow USA; an ASSA ABLOY Group company.
 - b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
 - c. DORMA Architectural Hardware; Member of The DORMA Group North America.
 - d. LCN Closers; an Ingersoll-Rand company.
 - e. Norton Door Controls; an ASSA ABLOY Group company.

2.13 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Burns Manufacturing Incorporated.
 - b. Hager Companies.
 - c. IVES Hardware; an Ingersoll-Rand company.
 - d. Rockwood Manufacturing Company.
 - e. Stanley Commercial Hardware; Div. of The Stanley Works.
 - f. Trimco.

2.14 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot 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.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

- a. Hager Companies.
- b. National Guard Products.
- c. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
- d. Reese Enterprises, Inc.

2.15 THRESHOLDS

- A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Hager Companies.
 - b. M-D Building Products, Inc.
 - c. National Guard Products.
 - d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
 - e. Reese Enterprises, Inc.
 - f. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
 - g. Sealeze; a unit of Jason Incorporated.
 - h. Zero International.

2.16 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch-thick stainless steel, 8" high, kick plate; with manufacturer's standard machine or self-tapping screw fasteners.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Baldwin Hardware Corporation.
 - b. Burns Manufacturing Incorporated.
 - c. IPC Door and Wall Protection Systems, Inc.; Div. of InPro Corporation.
 - d. IVES Hardware; an Ingersoll-Rand company.
 - e. Pawling Corporation.
 - f. Rockwood Manufacturing Company.
 - g. Trimco.

2.17 AUXILIARY DOOR HARDWARE

- A. Auxiliary Hardware: BHMA A156.16.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Baldwin Hardware Corporation.
 - b. Hager Companies.
 - c. Rockwood Manufacturing Company.
 - d. Stanley Commercial Hardware; Div. of The Stanley Works.
 - e. Trimco.

2.18 FLUSH BOLTS

- A. Flush Bolts: BHMA A156.16;
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Hager Companies.
 - b. IVES Hardware; an Ingersoll-Rand company.
 - c. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
 - d. Rockwood Manufacturing Company.

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 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; 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."
5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.20 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.

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.

- 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 of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. 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.
- E. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- F. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.
 - 1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.
- G. 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."
- H. 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.
- I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

- A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed 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. 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.
- B. Occupancy Adjustment: Approximately twelve months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 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. 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."

3.8 DOOR HARDWARE SCHEDULE

- A. HARDWARE SET NO. 1 (Door Types "A," "B," and "C,")
 1. 3 PR Hinges Hager BB1191 – 4.5 X 4.5 NRP (Stainless Steel)
 2. 1 Lockset Corbin Russwin CL3351-NZD, 626 Finish
 3. 1 Cylinder Corbin Russwin 626 Finish
 4. 1 Closer LCN4040, 689 Finish

- 5. 1 Kick Plate 8" High, Stainless Steel
- 6. 1 Threshold Hager 413S, MIB Finish
- 7. 1 Sweep Hager 780S, MIL Finish

B. HARDWARE SET NO. 2 (Door Type "D")

- 1. 6 PR Hinges Hager BB1191 – 4.5 X 4.5 NRP (Stainless Steel)
- 2. 1 Lockset Corbin Russwin CL3351-NZD, 626 Finish
- 3. 1 Cylinder Corbin Russwin 626 Finish
- 4. 1 Closer LCN4040, 689 Finish
- 5. 2 Kick Plates 8" High, Stainless Steel
- 6. 1 Threshold Hager 413S, MIB Finish
- 7. 2 Sweeps Hager 780S, MIL Finish
- 8. 1 Strike Plate Hager 1415
- 9. 2 Manual Flush Bolts Hager 282D, US3 finish

END OF SECTION 087100