

FOR THE PROJECT TITLED:

**FCPS NEW MIDDLE SCHOOL – POLO CLUB**  
**KDE BG # 21-176**  
**FCPS BID # 48-22**  
**JRA Project No. 202078**  
Fayette County Public Schools  
Lexington, Kentucky

To: Prospective Bidders

From: JRA Architects  
3225 Summit Square Place, Suite 200  
Lexington, KY 40509

Project Contact: D. Robert Deal, AIA, LEED AP

The Addendum will form a part of the Contract Documents and modifies the original Bidding Documents dated June 2022.

Bidders must acknowledge receipt of this Addendum in the space provided on the Form of Proposal. Failure to do so may subject the bidder to disqualification.

Bidding Documents, including the Drawings and Specifications, are amended as described herein.

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**ADDENDUM ITEMS:**

**ITEM NO. 1.01**

Refer to the Specification 08 3490 – Tornado Resistant Steel Doors & Frame Assemblies. Add acceptable alternate to Part 2.1.C.2  
e. Stala Integrated Assemblies, LLC.

**ITEM NO. 1.02**

Refer to the Specification 05 4000 – Cold Formed Metal Framing. SFS Nvelope NV1 Thermally Broken Cladding Attachment system can be used as a contractor option for the exterior furring at metal panel wall types for the large cavity.

**ITEM NO. 1.03**

Reissue Specification 00 4113-03 – FCPS Supplier Diversity Program Contract Forms Packet Construction.

**ITEM NO. 1.04**

Reissue Specification 00 4113-02 – FCPS Bid Document Submittal Schedule Checklist.

**ITEM NO. 1.05**

Refer to the Specification 11 6001 – Music Suite Acoustical Wall and Ceiling Panels. G&S Acoustics as an acceptable equal.

**ITEM NO. 1.06**

Refer to the Specification 12 3583 – Instrument Storage Cabinet Systems. Add acceptable alternate to Part 2.1.A  
3. Stevens Industries

**ITEM NO. 1.07**

Refer to the Specification 07 4113.19 – Batten-Seam Metal Roof Panels. Add acceptable alternates to Part 2.2.C.2

- g. Dynaclad (system must provide everything required to meet the warranty listed in specs)
- h. Bemo USA Corporation

**ITEM NO. 1.08**

Refer to the Specification 07 4243 – Metal Composite Material Wall Panels. Add acceptable alternates to Part 2.2.A.1

- h. Fairview Architectural North America – Vitrabond FR ACM and Arrowhead Panel System
- i. Bemo USA Corporation

**ITEM NO. 1.09**

Refer to the Specification 08 1416 – Flush Wood Doors. Add acceptable alternate to Part 2.4.A

- c. Oshkosh Door Company

**ITEM NO. 1.10**

Refer to the Specification 11 6653 – Gymnasium Dividers. Add acceptable alternate to Part 2.4.A

- 3. ADP Lemco Inc.

**ITEM NO. 1.11**

Refer to the Specification 08 1113 – Hollow Metal Doors and Frames. Add acceptable alternate to Part 2.1.A

- 5. De La Fontaine

**ITEM NO. 1.12**

Refer to the Specification 08 9119 – Fixed Louvers. Add acceptable alternate to Part 2.3.A.1

- d. Construction Specialties Drainable Louver and Storm Resistant Louver. (must meet requirements on drawings and in specs)

**ITEM NO. 1.13**

Refer to the Specification 01 1000 – Summary. Remove 1.9.A.4, 5, and 6. All casework is to be provided by the contractor. It is not Owner furnished.

**ITEM NO. 1.14**

Refer to the Specification 10 1100 – Visual Display Boards. Add acceptable alternate to Part 2.2.A

- 6. K-Pro Specialty Products/Educational Equipment

**ITEM NO. 1.15**

Refer to the Sheet G-103 – First Floor Life Safety Plans. Drinking Fountain total provided should be 24.

| PLUMBING FIXTURE COUNT |                  |          |       |           |          |       |
|------------------------|------------------|----------|-------|-----------|----------|-------|
| TYPE                   | REQUIRED @ 1,367 |          |       | PROVIDED  |          |       |
|                        | EDUCATION        | BUSINESS | TOTAL | EDUCATION | BUSINESS | TOTAL |
| DRINKING FOUNTAINS     | 19               | 1        | 20    | 22        | 0        | 24    |
| LAVATORIES             | 28               | 2        | 30    | 36        | 1        | 37    |
| SERVICE SINKS          | 4                | 0        | 4     | 10        | 0        | 11    |
| TOILETS (FEMALE)       | 19               | 1        | 20    | 27        | 4        | 31    |
| TOILETS (MALE)         | 8                | 1        | 9     | 9         | 4        | 13    |
| URINALS (MALE)         | 18               | 0        | 18    | 18        | 0        | 18    |

**ITEM NO. 1.16**

Refer to the Sheet F-102 – Food Service Equipment Floor Plan. Revise detail 1/FS-100 (attached) to show ICF wall construction.

**ITEM NO. 1.17**

Refer to the Specification 10 7300 – Protective Covers. Add acceptable alternate to Part 2.1.A  
10. Ceas+

**ITEM NO. 1.18**

Refer to Drawing C-300 Contextual Grading Plan – Delete Grading Note Number 6 in its entirety.

**ITEM NO. 1.19**

Refer to the Specification 08 3413.13 – Multipanel Folding Aluminum Framed Glass Doors. Add acceptable alternate to Part 2.1.A  
4. Sunflex

**ITEM NO. 1.20**

Refer to the Specification 22 3100 - DOMESTIC WATER SOFTENERS. Add CustomCare Water Treatment (division of AO Smith) to the acceptable contractors and manufacturers to Part 2.1A.

**ITEM NO. 1.21**

Refer to the Specification SECTION 22 1119 - DOMESTIC WATER PIPING SPECIALTIES  
Add Lawler to the acceptable contractors and manufacturers to Part 4.7A.

**ITEM NO. 1.22**

See added Specification 22 1123.21 Inline, Domestic-Water Pumps.

**ITEM NO. 1.23**

Refer to the Specification 23 0900 – Instrumentation and Control for HVAC. Add Siemens to the acceptable Contractors and Manufacturers in Part 1.05.A.

**ITEM NO. 1.24**

Refer to the Specification 23 7223 – Packaged Indoor Heat Recovery Units. Add AAON to the acceptable manufacturers. A split-system DOAS with energy recovery, hot-gas reheat, and capable of meeting performance requirements in the schedule is an acceptable alternative to the packaged Alpha Aire unit.

**ITEM NO. 1.25**

Refer to the Specification 23 7433 – Water Source Dedicated Outdoor-Air Units. Add AAON to the acceptable manufacturers list in Part 2.1.A.

**ITEM NO. 1.26**

Refer to the Specification 23 8126 – Split System Air Conditioners. Add LG to the acceptable manufacturers in Part 2.1.A.

**ITEM NO. 1.27**

Refer to the Specification 23 8146 – Water-Source Unitary Heat Pumps. Add Climatemaster to the acceptable manufacturers list in Part 2.2.A and 2.3.A.

**ITEM NO. 1.28**

Refer to the Sheet H-400 HVAC Schedules – Add the following remark to Packaged Air-Source Dedicated Outdoor Air Systems schedule: 4. As an alternate to the packaged Alpha-Aire unit, a split-system DOAS with energy recovery, hot-gas reheat, and capable of meeting performance requirements will be acceptable. Unit must fit in space with all maintenance and code-required clearances. The condensing unit can be located adjacent to the condensing units for the A-wing IT room condensing units. The contractor will be responsible for the additional electrical circuit to the condensing unit, which can be pulled from Panel 2L3.

**ITEM NO. 1.29**

Refer to sheet E-130 Light Fixture Schedule & Sequence of Operations – Light fixture LF-1C is to be changed to Lumax fixture LGWLED as indicated on drawings.

**ITEM NO. 1.30**

Refer to sheet A-602 - Door Schedule. Door E100B-L is to be the door frame opening on the mockup. Door/Hardware not required. Just the Frame.

**ITEM NO. 1.31**

Reissue Specification 08 7100 – Door Hardware.

**ITEM NO. 1.32**

Refer to sheet A-602 - Door Schedule. Change Doors A113-A and A113-B to WD Elevation N3.

**ITEM NO. 1.33**

Attached is the Pre-Bid Sign-in Sheet.

**END OF ADDENDUM NO. 1.00**

## FCPS BID DOCUMENT SUBMITTAL SCHEDULE CHECKLIST

**1. 7-10 (TBD by architect) calendar days prior to Bid Date:**

- Written Request for Information submitted to Architect
- Written Requests for Substitution

**2. 4 calendar days prior to Bid Date:**

- Last Addendum issued (Unless postponing Bid Date)

**3. Bid Date (due at time of Bid) Bidder provides:**

- Bid Bond (AIA A310 – 2010)
- FCPS Supplier Diversity Program Contract Forms
  - MWVBE Good Faith Effort Summary Sheet (top portion completed & signed)
  - MWVBE Good Faith Effort Supplemental Sheet
  - Waiver for Participation of MWVBE (if applicable)
- Form of Proposal, includes List of Major Subcontractors [2<sup>nd</sup> Tier]

**4. Bid Date (due one [1] hour after receipt of bids), Apparent Low Bidder provides:**

- List of Suppliers and Manufacturers (Form of Proposal)
  - Schedule of Values
  - Includes Kitchen Equipment
- Unit Prices (Form of Proposal)

**5. 24 hours after receipt of bids, Apparent Low Bidder provides:**

- FCPS Supplier Diversity Program Contract Forms
  - MWVBE Participation Form
  - MWVBE Subcontractor / Material Supplier Utilization Form
- Accurate Total of ALL Direct Purchase Orders  
(With MWVBE Supplier Value Broken Out)
- Accurate Total of General Contract (No change to Bid Amount!)
- List of Sub-subcontractors (3<sup>rd</sup> Tier)
- List of Additional Suppliers and Manufacturers

**6. 48 hours after receipt of bids, Apparent Low Bidder provides:**

- On-Site Project Superintendent Form (identify Superintendent via resume)
- Any additional contractor or subcontractor qualification data as requested by the Architect following the bid opening

**7. 4 calendar days after receipt of bids, Apparent Low Bidder provides:**

- List of Direct Material Purchases (Form of Proposal)  
[Maximum 60 DPOs, including base bid and alternates]
- Major Subcontractors [2<sup>nd</sup> tier] Bonding Company Commitment Letters

**8. 7 calendar days after receipt of bids, Apparent Low Bidder provides:**

- Affidavit of Assurance – Contractor
- Affidavit of Assurance – Subcontractors

**9. 14 business days after receipt of bids, Apparent Low Bidder provides:**

- Completed/Executed FCPS Direct Purchase Order Detail Sheets

**10. 30 calendar days after Bid Date, Apparent Low Bidder provides:**

- More detailed and complete list of Materials & Equipment as required

**NOTE:** All bid document submittals shall be simultaneously copied to FCPS Facility Design & Construction and the Architect.



FAYETTE COUNTY PUBLIC SCHOOLS

# **SUPPLIER DIVERSITY PROGRAM CONTRACT FORMS**

**Sarah A. Gaines, Manager**  
Economic Development  
Fayette County Public Schools  
1126 Russell Cave Road  
Lexington, Kentucky 40505  
859-381-3817  
[sarah.gaines@fayette.kyschools.us](mailto:sarah.gaines@fayette.kyschools.us)

**NOTICE OF EXPECTATION  
TO SUPPORT EQUAL OPPORTUNITIES FOR  
MINORITY, WOMEN, AND VETERAN-OWNED BUSINESS ENTERPRISES (MWVBE)  
CONTRACT PARTICIPATION**

The mission of the Fayette County Public Schools (FCPS) is to create a collaborative community that ensures all students achieve at high levels and graduate prepared to excel in a global society.

As one of the largest employers in Fayette County, we know the impact of how we spend the money entrusted to us by taxpayers has a far-reaching effect on the greater economic development of the entire community. FCPS values diversity, inclusion, and equity and encourages the participation of minority, women, and veteran-owned business enterprises (MWVBE) as its vendors and construction contractors. Our goal is to spend 12% of the value of the total contract with MBEs, WBEs, and VBEs, and all potential contractors/vendors are to engage in good faith efforts to include MWVBE as subcontractors and suppliers.

All construction bids and RFPs will be reviewed in detail by the Departments of Economic Development (ED), Purchasing (PD), and Facility Design & Construction (FDC) prior to awards being submitted to the Board for approval. FCPS reserves the right to work with the most responsible and responsive bidder. That means the District may need to move to the next lowest bidder if the proposed winning bidder is unwilling and unable to demonstrate documented good faith efforts to comply with this goal. However, nothing about the terms of this notice, nor any related policy or procedure, shall be construed to mean the District will not comply with applicable provisions of procurement law, including but not necessarily limited to applicable provisions of KRS Chapter 45A, nor shall it be construed to mean the District will award contracts to bidders, contractors, and subcontractors who are not qualified to perform a given contract or project.

For assistance in locating possible minority, women, and veteran (MWVBE) subcontractors, please follow this link to the FCPS Economic Development MWVBE website: [fcps.net/mwvb](http://fcps.net/mwvb) or contact Sarah Gaines, Manager of Economic Development.

The Board's commitment extends to all providers of goods and services, which are broken down into the following categories:

1. Construction Contractors
2. Professional Service Providers
3. Vendors/Suppliers of Tangible Goods and Commodities

**Fayette County Public Schools**  
**MWVBE Participation Goals**

**A. DEFINITIONS**

- 1) Minority-Owned Business Enterprise (MBE): a business which is certified as being at least 51% owned, operated, and managed by persons who are Black or African-American, Hispanic-American, Asian-American, or Native American.
- 2) Women-Owned Business Enterprise (WBE): a business which is certified as being at least 51% owned, operated, and managed by a woman or group of women.
- 3) Veteran-Owned Business Enterprise (VBE): a business which is certified as being at least 51% owned, operated, and managed by a U.S. military veteran.
- 4) Good Faith Efforts: efforts that, given all relevant circumstances, a bidder or proposer actively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts (See D. below) will be considered, along with any other relevant factors (See Good Faith Effort Summary Sheet).
- 5) Certification: Certification provides a clear way to demonstrate a business entity meets the definition of an MBE, WBE, or VBE as stated above. The District accepts certifications from third-party certifying agencies like the Tri-State Minority Supplier Development Council (TSMSSDC), National Minority Supplier Development Council (NMSDC), Women's Business Enterprise National Council (WBENC), National Women Business Owners Corporation (NWBOC), Kentucky Finance and Administration Cabinet (KY MWVBE/KY SDVOSB), National Veteran Owned Business Association (NaVOBA), and any of the various certifications from the Small Business Administration (SBA). FCPS will rely on certifying agencies to verify certification of any businesses claiming to be certified. Additionally, District staff may classify businesses that are not certified by the above entities if a business demonstrates that it meets the certifying entities' definition of a MWVBE.

**B. GENERAL**

- 1) FCPS expects all potential contractors to make a good faith effort to include MBE, WBE, and VBE as subcontractors or suppliers in their bids.
- 2) Toward that end, FCPS has established 12% of the value of the total contract as a goal for participation of MWVBE on this contract.
- 3) **It is therefore an expectation that each Bidder include in its bid, the same goal for MWVBE participation and other requirements as outlined in this section. Furthermore, the expectation is that the 12% will include equal participation from MBEs and WBEs.**

**C. PROCEDURES**

- 1) The successful bidder will be required to report to FCPS the dollar amounts of all payments submitted to MWVBE subcontractors and suppliers for work done or materials purchased for this contract. (See Section D.3.e below.)
- 2) Replacement of a MWVBE subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor/supplier with another MWVBE; this is subject to approval by FCPS. (See FCPS MWVBE Substitution Form.)
- 3) For assistance in identifying qualified certified MWVBE businesses to solicit for potential contracting opportunities, follow this link to the FCPS Economic Development MWVBE



website: [fcps.net/mwvb](https://fcps.net/mwvb) or contact the Department of Economic Development at (859) 381-3817.

- 4) FCPS will make every effort to notify interested MWVBE subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid due date, and all other pertinent information regarding the project.

**D. OBLIGATIONS OF BIDDER FOR GOOD FAITH EFFORTS**

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWVBE subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written detailed documentation of their Good Faith Efforts to do so.**
- 2) Award of contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal (Bid Documents) includes the forms set out below. These forms must be completed and submitted as described:
  - a. Good Faith Effort Summary Sheet: This form will be used to substantiate your efforts in identifying and including MWVBE. ***To be submitted with Bid Documents.***
  - b. MWVBE Good Faith Effort Supplemental Sheet: This form will be used to capture information regarding solicitation of MWVBE for this contract. ***To be submitted with Bid Documents.***
  - c. MWVBE Participation Form: This form verifies the MWVBE subcontractors and material suppliers to be used on this project. ***To be submitted within 24 hours of Bid opening.***
  - d. MWVBE Utilization Form: This form is intended to capture the MWVBE subcontractor's and material supplier's understanding of the work/material to be performed and the price as agreed with the Bidder/Contractor. This form must be completed and signed by the Bidder/Contractor AND the MWVBE subcontractor or material supplier. ***To be submitted within 24 hours of Bid opening.***
  - e. Electronic MWVBE Subcontractor Payments: If awarded this contract, the prime contractor is obligated to submit a monthly report of all payments made to any MWVBE subcontractors or suppliers working on this project. MWVBE subcontractors are obligated to acknowledge receipt of payments made to them by prime contractors. These electronic reports will be made and acknowledged on a monthly basis in the FCPS Diversity Compliance portal at <https://fcps.diversitycompliance.com>

The Manager of Economic Development will contact the prime contractor and MWVBE subcontractors to schedule mandatory online training. ***To be processed monthly by the awarded bidder.***

- f. MWVBE Subcontractor Substitution Form: If a MWVBE contractor selected for this project is not able to meet the obligations as assigned, the prime contractor is obligated to replace that MWVBE subcontractor through the Good Faith Effort steps outlined in this document and to secure another MWVBE with like skills at a comparable contract price. All required forms and documentation for this substitution should be returned to the Manager of Economic Development. ***To be submitted by the awarded bidder if MWVBE substitutions are made.***

- g. Waiver Form: Contact the Purchasing Department or the Department of Economic Development to discuss bids you believe have no opportunity for the utilization of any subcontractors. ***By prior FCPS approval only.***

**4) Failure to submit this information as requested may be cause for rejection of bid.**

Contractors shall use good faith efforts as set forth herein to achieve the MWVBE goals. However, FCPS shall not be required to pay any amounts in excess of the lowest responsible and responsive price or best evaluated bid to procure any goods or services, or to delay design, development, or construction activities in order to achieve the MWVBE goals.

FCPS agrees the bid requirements shall obligate a contractor to agree to execute a contract by which it is contractually obligated to use good faith efforts as set forth herein, and that for a bid or price to be responsible and responsive, it must have been prepared by a contractor that agrees to be so contractually obligated. In the event that the lowest price or best evaluated bid is not responsible and responsive because the contractor does not agree to be contractually obligated to use good faith efforts as set forth herein, then that bid will be considered non-responsive and FCPS may re-bid that contract or select the next lowest responsive price or best evaluated bid, if permitted by applicable law.

**GOOD FAITH EFFORT SCORING SYSTEM**

Bidders who utilize subcontractors shall make good faith efforts to meet the District's MWVBE goals for each project on which they bid. Bidders who do not meet the goals shall submit documentation of their good faith efforts in soliciting pricing. Award of contract shall be conditional upon the bidder's satisfaction of these good faith effort requirements.

Bidders who do not utilize subcontractors in the performance of their work are not required to be awarded points on the Good Faith Effort Summary Sheet but must complete the waiver form.

Bidders who self-perform work with their own forces in excess of 80% of the awarded contract value and not meeting the goals of MWVBE participation shall, at a minimum, have a total score 70 points on the MWVBE Summary Sheet to be considered meeting these requirements.

Bidders who self-perform 80% or less of the awarded contract value and not meeting the goals of MWVBE participation shall, at a minimum, have a total score of 80 points on the MWVBE Summary Sheet to be considered meeting these requirements.

Points are awarded based on seven (7) bidder actions as described on the Summary Sheet. **These points are awarded on a pass-fail basis and not on a subjective range.** To receive the point value for a given action, appropriate and complete backup must be submitted and labeled. Bind (staple, paperclip, etc.) together the backup for each Action met and label the top page with the number of the Action. Actions 1, 2, and 3 can be addressed by completing the Good Faith Effort Supplemental Sheet in full and providing the appropriate backup. For Actions 4, 5, 6, and 7, appropriate backup must be attached to show evidence that the action was completed.

**GOOD FAITH EFFORT SUMMARY SHEET**

***THIS DOCUMENT MUST BE COMPLETED, SIGNED, AND SUBMITTED WITH THE BID OR PROPOSAL, IF YOU HAVE NOT MET THE GOALS.***

| <b>Project Name:</b>  |  | <b>Project Bid #:</b>  |        |                          |
|---|--|------------------------|--------|--------------------------|
| <b>Contractor Signature:</b>  |  | <b>Date Submitted:</b> |        |                          |
| <b>Contact Person:</b>  |  |                        |        |                          |
| <b>Address:</b>   |  | <b>Phone #:</b>        |        |                          |
| <b>Email:</b>   |  |                        |        |                          |
| Points  | Bidder Action(s)<br><b>Good faith efforts are efforts that, given all relevant circumstances, a bidder or proposer actively seeking to meet the goals can reasonably be expected to make.</b>  | Points Awarded         |        |                          |
|   |  | Econ. Dev.             | Purch. | Facility Design & Const. |
| <b>50 Points</b>  | <b>Action 1. Solicitations, Written Notices, etc.:</b> Solicited through reasonable and available means including, but not limited to the following examples: 1) attendance at pre-bid meeting, 2) requested assistance from the Manager of Economic Development at sarah.gaines@fayette.kyschools.us and/or the FCPS Economic Development website, 3) sent written notices of proposal by certified mail or e-mail to qualified, certified MWVBE soliciting their participation in the contract. To be considered reasonable, the bidder should solicit this interest <b>at least seven (7) days before the FCPS bid due date</b> to allow MWVBE sufficient time to respond to the solicitation. (Complete attached sheet.) |                        |        |                          |
| <b>10 points</b>  | <b>Action 2. Follow-up:</b> Followed up initial solicitations of interest by contacting MWVBE to determine their level of interest, conferred with qualified, certified MWVBE and explained the scope and requirements of the work for which their bids or proposals were solicited, and attempted to identify portions of the work for qualified, certified MWVBE's participation in order to increase the likelihood of meeting the goals, including breaking down contracts into economically feasible units. (Complete attached sheet.)  |                        |        |                          |
| <b>10 points</b>  | <b>Action 3. Evidence of Justification for Bid Rejection:</b> If participation of specific MWVBE was considered, the bidder did not reject MWVBE as being unqualified without sound reasons based on a thorough investigation of their capabilities. An MWVBE subcontractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations [i.e. union vs. non-union employee status] are not legitimate causes for the rejection of or no solicitation of MWVBE subcontractor proposals when considering the contractor's efforts to meet the project goal. Pricing is an acceptable justification to reject a bid. (Complete attached sheet.)          |                        |        |                          |
| <b>10 points</b>  | <b>Action 4. Advertisement:</b> Advertised opportunities to participate in the contract in general circulation media, trade and professional association publications, small and minority business media, and/or publications of minority, women, and veteran business organizations at least 10 days prior to the deadline for submission of bids. (Attach copies or examples of advertisements.)   |                        |        |                          |
| <b>10 points</b>  | <b>Action 5. Community and Other Organizational Services Support:</b> Effectively used the services available to minority, women, and veteran community organizations, minority, women, and veteran contractor groups, local, state and federal minority, women, and veteran business assistance offices, and other organizations that work with minority, women and veterans and/or provide assistance in the recruitment and placement of MWVBE (i.e. KYPTAC, Commerce Lexington, etc.). (Attach proof of use or contact.)   |                        |        |                          |
| <b>5 points</b>   | <b>Action 6. Ongoing Mentor/Protégé Relationships:</b> The bidder is actively participating in an ongoing mentor/protégé relationship with an MWVBE in the assistance of their business growth and development (Attach proof of program.)  |                        |        |                          |
| <b>5 points</b>   | <b>Action 7. Attendance at a FCPS sponsored MWVBE Event:</b> The bidder attended a "Doing Business with FCPS" session, a "Meet the Primes" event, or another FCPS MWVBE session within 6 months of the time of the bid. (Attach evidence of attendance.)   |                        |        |                          |
| <b>Total Points</b>   |  |                        |        |                          |
| <b>Based on the total points and the supporting documentation, I determine that adequate Good Faith Effort was demonstrated by the bidder. (Initial and Date – For FCPS Use Only)</b> |  |                        |        |                          |

**Fayette County Public Schools  
MWVBE GOOD FAITH EFFORT  
SUPPLEMENTAL SHEET**

(Form to be submitted with Bid Document)

**This sheet or similar contractor provided form must be completed to receive the Bidder Action Points 1, 2 and 3.**

**For each MWVBE contacted, list the name, type of work, phone number, contact person, and additional information related to the Bidder's Actions. Please copy additional sheets if necessary.**

|  |   |  |                       |  |
|--|---|--|-----------------------|--|
| <b>Company Name<br/>(Type of Work)</b>             | <b>MBE</b><br><b>WBE</b><br><b>VBE</b>    | <b>Phone Number</b>  | <b>Contact Person</b> | <b>How was business contacted?<br/>Attach phone/email records.</b> |
| <b>Date of First Solicitation:<br/>(Action #1)</b> | <b>Date of Follow-Up:<br/>(Action #2)</b> | <b>Was company selected? (Action #3)<br/>Yes: Please list \$ amount of contract.<br/>No: Please list reason.</b> |                       |  |

|  |   |  |                       |  |
|--|---|--|-----------------------|--|
| <b>Company Name<br/>(Type of Work)</b>             | <b>MBE</b><br><b>WBE</b><br><b>VBE</b>    | <b>Phone Number</b>  | <b>Contact Person</b> | <b>How was business contacted?<br/>Attach phone/email records.</b> |
| <b>Date of First Solicitation:<br/>(Action #1)</b> | <b>Date of Follow-Up:<br/>(Action #2)</b> | <b>Was company selected? (Action #3)<br/>Yes: Please list \$ amount of contract.<br/>No: Please list reason.</b> |                       |  |

|  |   |  |                       |  |
|--|---|--|-----------------------|--|
| <b>Company Name<br/>(Type of Work)</b>             | <b>MBE</b><br><b>WBE</b><br><b>VBE</b>    | <b>Phone Number</b>  | <b>Contact Person</b> | <b>How was business contacted?<br/>Attach phone/email records.</b> |
| <b>Date of First Solicitation:<br/>(Action #1)</b> | <b>Date of Follow-Up:<br/>(Action #2)</b> | <b>Was company selected? (Action #3)<br/>Yes: Please list \$ amount of contract.<br/>No: Please list reason.</b> |                       |  |

**Fayette County Public Schools**  
**MWVBE Participation Form**

(Form to be submitted within 24 Hours of Bid Opening)

**If awarded this bid/proposal, the Bidder/Contractor will subcontract with the following MWVBE subcontractors/material suppliers:**

**Project Name:** \_\_\_\_\_

**Project Bid/RFP#:** \_\_\_\_\_

**Bidder/Contractor:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Total Bid/Estimate: \$** \_\_\_\_\_

|                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| <b>Total MBE \$</b> _____ | <b>Total WBE \$</b> _____ | <b>Total VBE \$</b> _____ |
| <b>Total MBE %</b> _____  | <b>Total WBE%</b> _____   | <b>Total VBE%</b> _____   |

| Service/Supply to be Subcontracted | MWVBE Company | Phone Number | Contact Person | MBE/WBE/VBE Total \$ |
|------------------------------------|---------------|--------------|----------------|----------------------|
|                                    |               |              |                |                      |
|                                    |               |              |                |                      |
|                                    |               |              |                |                      |
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|                                    |               |              |                |                      |
|                                    |               |              |                |                      |
|                                    |               |              |                |                      |

**(For each MWVBE Subcontractor/Material Supplier, attach Utilization Form)**

I certify that the information contained in this document is true, accurate, and complete. I am aware that in the event of a replacement of a MWVBE subcontractor, I will adhere to the replacement requirements set forth in the FCPS bid documents.

\_\_\_\_\_  
**Bidder/Contractor Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**

**Fayette County Public Schools**  
**MWVBE Subcontractor/Material Supplier Utilization Form**  
**(Form to be submitted within 24 Hours of Bid Opening)**

**Project Name:** \_\_\_\_\_  
**Project Bid/RFP#:** \_\_\_\_\_  
**Bidder/Contractor:** \_\_\_\_\_  
**Contact Person:** \_\_\_\_\_

This form is intended to capture the MWVBE subcontractor's and material supplier's understanding of the work to be performed and the price as agreed with the Bidder/Contractor. This form must be completed and signed by the Bidder/Contractor **AND** the MWVBE subcontractor and material suppliers and submitted as part of the bid or proposal package.

MWVBE Company: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

MWVBE Subcontractor/Material Supplier Price Agreed: \$ \_\_\_\_\_

Description of Work: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I hereby certify that the above information is correct.

|                 |      |                             |      |
|-----------------|------|-----------------------------|------|
| MWVBE Signature | Date | Bidder/Contractor Signature | Date |
| Title           |      | Title                       |      |

**Submit Separate Form per MWVBE Subcontractor/Material Supplier  
to be Utilized**

**Attach MWVBE Certification**

**Fayette County Schools**  
**MWVBE Subcontractor Substitution Form**  
 (Form to be utilized by Awarded General Contractor, as necessary)

**Date:** \_\_\_\_\_

**Bid/RFP/Quote Reference #** \_\_\_\_\_

**Prime Total Contract Awarded \$** \_\_\_\_\_

The substituted MWVBE subcontractor listed below has been contacted and has agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to the FCPS Department of Economic Development for approval. By the authorized signature of a representative of our company, we understand that Good Faith Efforts procedures were followed in soliciting and retaining this contractor and documentation was submitted with this substitution form. This information will be entered into FCPS files for this project. Signature of both the prime and the MWVBE subcontractor is required below.

|  |  |
|--|--|
| <b>Reason for Substitution</b>   |  |
| <b>MWVBE Company being replaced (Include contact name/address/phone and email address)</b> |  |
| <b>New MWVBE Company (Include contact name/address/phone and email address)</b>            |  |
| <b>Please attach MBE, WBE or VBE certification for new company</b>                         |  |
| <b>Work to be Performed</b>  |  |
| <b>MWVBE Subcontractor Total Contract \$</b>   |  |
| <b>MWVBE % of Total Contract</b>   |  |

I certify that the information in this document is correct. By reporting this substitution, my company is adhering to the substitution requirements set forth in the FCPS purchasing documents.

\_\_\_\_\_  
**Prime Contractor/Title**

\_\_\_\_\_  
**MWVBE Subcontractor/Title**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Date**

**Fayette County Public Schools**  
**Waiver for Participation of Minority, Women, and Veteran-Owned**  
**Business Enterprises**  
**(Form to be submitted with Bid Document)**

**Project Name:** \_\_\_\_\_

**Project Bid#:** \_\_\_\_\_

**Bidder/Contractor:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

The above-named bidder cannot fulfill its commitment to minority, women, and veteran-owned business enterprises' participation due to the following reasons:

\_\_\_\_\_ Items being bid are not applicable for subcontracting.

\_\_\_\_\_ Other (Provide detailed explanation.) \_\_\_\_\_

\_\_\_\_\_  
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\_\_\_\_\_

To the best of my knowledge and belief, the above information is true, accurate, and complete and reflects our commitment to support the minority, women, and veteran-owned business enterprise initiative of Fayette County Public Schools.

\_\_\_\_\_  
**Bidder/Contractor Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



**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. This Section includes the following:
1. Commercial door hardware for the following doors:
    - a. Aluminum.
    - b. Hollow metal.
    - c. Flush wood.
    - d. FRP.
    - e. Gates.
    - f. Overhead doors and shutters.
    - g. Windstorm.
  2. Extra materials to be turned over (retainage issue) to FCPS Electronics Foreman at Pre-installation conference.
  3. **Field painting of removable mullions to match aluminum frames. See Door Hardware Sets for field painting information.**
  4. **Electrified Door Hardware. See Note 1 at the beginning of 087100-3.7 and electrical specifications for more information. Electrified door hardware includes:**
    - a. **Access control hardware.**
    - b. **Power supplies requiring 120VAC service.**
    - c. **Magnetic door holders requiring fire alarm work and materials.**
    - d. **Door position switches at all exterior doors and some interior doors as indicated in the Hardware Sets.**
    - e. **Low-energy ADA automatic door operators requiring AAADM certified provision and installation.**
    - f. **Riser and point-to-point wiring diagrams.**

## 1.3 ALLOWANCES

- A. **Allowance for Door Hardware Inspection:** Include an Allowance of \$12.00 per opening x (419) openings = \$5,028.00 to provide Door Hardware Inspection Services and Field Quality Report as indicated in paragraph B below.
- B. Door Hardware Inspection Services
1. Scope:
    - a. Door Hardware Inspection Services for the project shall be performed by the Inspector as a sub-consultant of the Architect.
    - b. Inspection of all swinging pedestrian doors and door hardware immediately following substantial completion of all hardware in entire project.

- c. Inspector to furnish a Field Inspection Report, itemized per each individual opening, to the Architect, to FCPS Facility Design & Construction and FCPS Electronics Foreman 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.
- 2. Inspector: Calvert Independent Hardware Specifications, LLC. (Calvert IHS, LLC.) shall perform all inspections and re-inspections required by this specification. Contact info: Joseph D. (Joe) Calvert CSI CDT AHC SCIP, 307 Oakwood Circle, Vine Grove, KY 40175, 502-930-2039, joe@hardware-specs.com, www.hardware-specs.com.
- 3. Initial Inspection and Re-inspections:
  - a. An initial inspection shall be performed as directed by the Architect when notified by the contractor.
  - b. Re-inspections are required until all items listed in the initial inspection report are approved by the Inspector as corrected.
    - 1) If there are 30 or more items in the initial or subsequent inspection reports, then the re-inspection will be paid for by the Contractor (via a deductive change order to the contract).
    - 2) If there are less than 30 items to correct in the initial inspection report, then a first re-inspection will be by the Inspector at no additional expense. If it is found during this re-inspection that all items in the initial inspection report have not been corrected, then subsequent re-inspections will be paid for by the Contractor (via a deductive change order to the contract).
- 4. Fees and Payment:
  - a. The cost of the initial inspection at substantial completion shall be included in the Allowance.
  - b. Re-inspections by the Inspector as indicated in paragraph C.3.b above shall be paid by the Contractor (via a deductive change order to the contract) at the rate of \$125.00 per hour.

#### 1.4 SUBMITTALS

- A. Number of Submittals: All items listed in this section are to be included in one submittal prepared by one Supplier.**
- B. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: Details of electrified door hardware, indicating the following:
  - 1. **Wiring Diagrams: Factory drawn; power, signal, and control wiring. Hardware submittals not including these diagrams will be rejected without review. Include the following:**
    - a. **Riser including mounting locations of electrified hardware, wire gages and number of conductors required.**
    - b. **Point-to-point wiring diagram including all terminations.**
    - c. **Elevation of each door including references to door and hardware set numbers.**
  - 2. **Detail interface between electrified door hardware and access control system.**
  - 3. **Operation Narrative: Describe the operation of doors controlled by electrified door hardware.**

4. **Deliver a copy of the wiring diagrams to the FCPS Electronics Foreman at the pre-installation conference (retainage issue). See 087100-1.6.H.**

D. Qualification Data:

1. Finish Hardware Installers: Company specializing in the installation of commercial door hardware with minimum of five years documented experience in commercial hardware installation.
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 detailed, 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/manufacture entity.
  - c. Available at reasonable times to Architect, Owner, and Contractor during course of work.
4. Automatic Door Operator Supplier
  - a. Established automatic operator distribution and installation firm which maintains and operates an office, display, and stock in project area and which is a factory authorized distributor of the automatic operator being furnished.
  - b. Currently certified by AAADM to install both high and low energy automatic door operators.
  - c. All schedules submitted to the Architect for approval and job use must include copies of the distributors factory authorization to distribute and install their operators and AAADM certification to install both high and low energy automatic door operators.

- E. Maintenance Data Submittal: For each type of door hardware. Include final hardware schedule, keying schedule, product data sheets for each item, manufacturers' published warranties, riser diagrams, and point-to-point wiring diagrams. **Deliver to Electronics Foreman of the Fayette County Public Schools no more than 30 days after approval of the keying schedule.**

- F. Warranty: Special warranty specified in this Section.

G. 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. **Provide index sorted by door number linking door numbers to hardware set numbers and hardware heading numbers.**
  - c. **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.**

- d. **Door Numbers: Identical to those used in the contract documents.**
  - e. Number of Copies: (5).
  - f. 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 and headings.**
      - 11) Door and frame sizes and materials.
      - 12) Items referenced but not furnished.
      - 13) System function description for each hardware set with electrified hardware.
      - 14) List of related door devices specified in other Sections for each door and frame.
  - g. 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.

## 1.5 QUALITY ASSURANCE

- A. **Furnish proper hardware types and quantities for proper door function, hardware mounting and clearances, aesthetics, 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 and costs included in the bid. No additional compensation will be allowed after bidding for hardware changes required for proper function, hardware mounting or clearances, aesthetics or to meet codes. The specification is not a detail from which products should be ordered; detailing the project is the responsibility of the Contract Hardware Supplier.**
- 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: **All items listed in hardware sets are to be furnished by one supplier.** Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

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. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:
1. NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:
    - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
    - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
      - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
      - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
    - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
  3. NFPA 101: Comply with the following for means of egress doors:
    - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
    - b. Thresholds: Not more than 1/2 inch high.
  4. Fire-Rated Door Assemblies: Provide door hardware for 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 (neutral pressure at 40" above sill) or UL-10C.
    - a. Test Pressure: Positive pressure labeling.
- E. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Conference is to include representatives of the Owner, Architect, Contractor, CM if applicable, Hardware Supplier's Architectural Hardware Consultant, Manufacturer of Key Cylinders, and FCPS Electronics Foreman. Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
  2. Plans for existing and future key system expansion.
  3. Requirements for key control storage and software.
  4. Installation of permanent keys, cylinder cores and software.
  5. Address and requirements for delivery of keys.
- G. Access Control Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Conference is to include representatives of the Owner, Architect, Contractor, CM if applicable, and Access Control (or Security) Supplier. Access control conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.

2. Plans for existing and future access control system expansion.
  3. Requirements for access control storage of credentials and software.
  4. Assignment and distribution of permanent access control credentials, badging equipment, and software.
  5. Access control privilege assignments including doors, time schedules, users, user groups, special credential functions, etc.
- H. 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, Architect's Hardware Consultant and Inspector, FCPS Electronics Foreman and Security Supplier. **Extra materials (see 087100-1.10) and wiring diagrams (see 087100-1.4.C) are to be delivered to the FCPS Electronics Foreman at this meeting (retainage issue).** 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.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
  - B. **Deliver hardware for aluminum and FRP doors to GC in timely manner so as not to delay fabrication of aluminum and FRP doors and frames. Balance of hardware may be delivered to GC at same time, packaged separately from aluminum and FRP door hardware, and may be billed as stored materials.**
  - C. 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.
  - D. Deliver cores and keys to Owner by registered mail or overnight package service. Obtain Owner's contact name and address from Architect.
- 1.7 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.
  - B. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, and security system.

## 1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: Two years from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
  - 1. Ten years for mortise locks and latches.
  - 2. Five years for panic/exit hardware.
  - 3. Twenty years for manual door closers.
  - 4. Five years for motorized electric latch retraction exit devices.
  - 5. One year for automatic door operators.

## 1.9 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 (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 hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

## 1.10 EXTRA MATERIALS

- A. **Furnish full-size units of door hardware described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.**
  - 1. **Door Hardware:**
    - a. **(2) mortised DPDT door position switch**
    - b. **(2) concealed electric power transfer**
    - c. **(2) storeroom function locksets**
    - d. **(2) office function locksets**
    - e. **(2) classroom function locksets**

- f. (10) mortise key cylinder housings
  - g. (10) rim key cylinder housings
  - h. (10) uncombined permanent key cylinder cores
2. Deliver above materials to FCPS Electronics Foreman at pre-installation conference (see 087100-1.6.H).

## PART 2 - PRODUCTS

### 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.
- B. Designations: Requirements for design, grade, function, material, finish, size and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products listed by model number establish a basis of design for that product genre. Other products manufactured by available manufacturers listed in other Part 2 articles may be provided as long as they are equal in all aspects to the basis of design product listed for that particular product genre.
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 Standards: In addition to other requirements in this section, provide products complying with or exceeding these standards and requirements for description, quality, and function.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electrified access control door hardware, in compliance with specifications, must be submitted in writing prior to the bid date and in accordance with the procedures and time frames outlined in Division 01 "Substitution Procedures". Approval of requests is at the discretion of the architect, owner, and their designated consultants.

### 2.2 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 with panic/exit devices or 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, 4-1/2" standard-weight, unless proper clearance requires a different width.
4. Doors with Closers: Ball-bearing hinges.

D. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior and in-swinging restroom door hinges: Stainless steel, with stainless-steel pin.
2. Balance of hinges: Steel, with steel pin.

E. Hinge Options: Provide the following:

1. Nonremovable 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.

F. Fasteners: Comply with the following:

1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
2. Wood Screws: For wood doors and frames.
3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.
4. Screws: Phillips flat-head. Finish screw heads to match surface of hinges.

G. Template Hinge Dimensions: BHMA A156.7.

H. Available Manufacturers:

1. Hager Companies (HAG).
2. McKinney Products Company; an ASSA ABLOY Group company (MCK).
3. Stanley; Div. of DormaKaba (STA).

## 2.3 SPRING HINGES

A. Self-Closing Hinges: BHMA A156.17

B. Available Manufacturers:

1. Hager Companies (HAG).
2. McKinney Products Company; an ASSA ABLOY Group company (MCK).
3. Stanley; Div. of DormaKaba (STA).

## 2.4 CONTINUOUS HINGES

A. Provide hinge of general series as indicated in hardware sets and of proper shape and model to suit door and frame configuration. **Factory-cut hinges 2" less than door height; mount hinges 2" from bottom edge of door.**

B. Continuous, Pinless-Type Hinges: Extruded-aluminum, pinless, hinge leaves; with concealed, self-lubricating thrust bearings.

1. Available Manufacturers:

- a. Hager Companies (HAG).
- b. Select Products Limited (SEL).
- c. Stanley; Div. of DormaKaba (STA).

## 2.5 ELECTRONIC ACCESSORIES

- A. Push-Button Switches: Industrial grade momentary or alternate contact, back-lighted push buttons with aluminum under-the-desk-mount switch enclosures. 12/24 VDC bi-color illumination.
  1. Acceptable Manufacturers:
    - a. Security Door Controls (SDC).
    - b. Securitron Door Controls (SEC).
    - c. Dortronics (DTR).
- B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. Rectangular mortised; screwed into place; DPDT contacts.
  1. Acceptable Manufacturers:
    - a. Architectural Control Systems, Inc.; (ACS).
    - b. Equal approved prior to bid.
- C. Electronic Power Transfers:
  1. Concealed: For new doors and frames, concealed when door is closed. All metal construction, cast housing with steel backboxes, two universal joints and rigid tubing. Acceptable Manufacturers:
    - a. Securitron Door Controls (SEC).
    - b. Hager (HAG).
    - c. Von Duprin (VON).

## 2.6 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. Electrified Locking Devices: BHMA A156.25. Equal in all characteristics to model specified.
  1. Available Manufacturers:
    - a. Best; Div. of DormaKaba (BES).
    - b. Hager (HAG).
    - c. Schlage Commercial Lock Division; an Allegion Company (SCH).

- D. Lock Trim:
  - 1. Levers: Cast.
    - a. Hager ARC model with full smooth return.
  - 2. Roses: Forged.
    - a. Hager Sectional (SECT) model.
  - 3. Lockset Designs: Provide design indicated in hardware sets, or, if sets are provided by another manufacturer, provide designs that match those designated.
- E. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
  - 1. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
- F. Backset: 2-3/4 inches (70 mm), unless otherwise indicated.
- G. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended as needed to protect frame, finished to match door hardware set, and as follows:
  - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.

## 2.7 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:
  - 1. Mortise Locks: BHMA A156.13.
- B. Mortise Locks: Stamped steel case with steel or brass parts; BHMA A156.13 Grade 1.
  - 1. Available Manufacturers:
    - a. Best; Div. of DormaKaba (BES).
    - b. Hager (HAG).
    - c. Schlage Commercial Lock Division; an Allegion Company (SCH).
- C. Compatibility with Key Cylinders: fully warranted for use with key cylinder furnished.

## 2.8 DOOR BOLTS

- A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
  - 1. Mortise Flush Bolts: Minimum 3/4-inch (19-mm) throw.
- B. Manual Flush Bolts: BHMA A156.16, Grade 1; designed for mortising into door edge.
  - 1. Available Manufacturers:
    - a. Door Controls International (DCI).
    - b. Glynn-Johnson; an Allegion Company (GLY).
    - c. Hager Companies (HAG).
    - d. IVES Hardware; an Allegion Company (IVE).

- e. McKinney Products Company; an ASSA ABLOY Group company (MCK).
- f. Rockwood Manufacturing Company (ROC).
- g. Trimco (TRI).

## 2.9 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. Removable Mullions
  - 1. BHMA A156.3.
  - 2. Key removable.
  - 3. Provide head cap spacers, angle brackets, and other mounting accessories as needed for proper mounting, and anchoring and support of screws, as needed for top jamb configuration.
  - 4. Provide mullion stabilizer sets for mullions at exterior openings.
- G. 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. **Provide escutcheon or pull plate type trims (blank or with pulls/levers as indicated by model number in hardware sets) so that the active case of every exit device (except on FRP doors) is through-bolted to a trim.**
- I. Shims: Provide shims if needed for clearance.
- J. Available Manufacturers:
  - 1. Detex, Inc. (DTX)
  - 2. Hager (HAG).
  - 3. Von Duprin; an Allegion Company (VON).

## 2.10 KEY CYLINDERS

- A. Standard Lock Cylinders: BHMA A156.5, Grade 1. Provide key cylinders for all hardware requiring key cylinders to function properly.
- B. Cylinders: Constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:
  - 1. Number of Pins: Seven.
  - 2. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.
  - 3. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  - 4. Keyway: Best Cormax, as directed by Owner.
  - 5. Length and Cam: As required for locking device.
- C. Permanent Cores: SFIC.
- D. Construction Keying: Comply with the following:
  - 1. Construction Cores: Provide keyed brass construction cores that are replaceable by permanent cores for exterior doors and with 10 extra cores for Contractor's use and 10 extra cores for Owner's use. Provide 6 construction master keys.
    - a. Owner will install the permanent cores. Contractor to remove construction cores as directed by Owner.
- E. Available Manufacturers for Key Cylinders:
  - 1. Best Access Systems; Div. of DormaKaba (BES).

## 2.11 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. Combine cores as directed by Owner.
- 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:
    - a. Cylinder Change Keys: Three per cylinder.
    - b. Master Keys: Six per master.
    - c. Blanks: Fifty.

## 2.12 KEY CONTROL SYSTEM

- A. Key Control Cabinet: BHMA A156.5, Grade 1; 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. Basis of design: Telkee Aristocrat AWC-450-S.

1. Recessed Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.
  2. **Locate and recess-mount into wall in Records Room.**
- B. Cross-Index System: Multiple-index system for recording key information. Include three receipt forms for each key-holding hook.
1. Available Manufacturers:
    - a. Telkee; a division of Sunroc Corporation (TEL).
    - b. Approved equal.

#### 2.13 FIRE DEPARTMENT KEY BOX

- A. Furnish (1) fully recessed hinged fire department key box with dual locks, tamper switch, and recessed mounting kit.
1. Basis of specification: Knox-Box Model 4446 x 4470; dark bronze.
  2. Available Manufacturers:
    - a. Knox Company.
    - b. Approved equal.
- B. Locate in exterior wall, recessed, within 10' of main entry, 6' above grade, as directed by Architect.

#### 2.14 OPERATING TRIM

- A. Materials: Fabricate from stainless steel, unless otherwise indicated.
- B. Dimensions: All dimensions, shapes, fasteners, and other properties identical to models specified in hardware sets.
- C. Push Plates:
1. 0.125" thick, Type 304 solid stainless steel, 4" or 8" wide as indicated by model number in hardware sets, 16" high (unless stile width requires different width), heavy bevel all (4) edges, 3/8" radius rounded corners, factory prepped for key cylinders and thumb-turns as required, countersunk for flush bevel-headed screws.
  2. Dimensions:
    - a. Top of plate to horizontal centerline of key cylinder: 5".
    - b. Horizontal centerline of key cylinder to horizontal centerline of thumb-turn: as required per dimension of lock model.
    - c. Lock-side edge of plate to vertical centerline of key cylinder: 2".
- D. Pull Plates:
1. Plate: 0.050" thick, 4" wide x 16" high (unless stile width requires different width), bevel all (4) edges, 3/8" radius rounded corners, factory prepped for key cylinders and thumb-turns as required, countersunk for flush bevel-headed screws.
  2. Grip: 1" wide, 8" CTC, Type 304 solid stainless steel, half-moon profile.
  3. Dimensions:
    - a. Top of plate to horizontal centerline of key cylinder: 2".

- b. Horizontal centerline of key cylinder to horizontal centerline of thumb-turn: as required per dimension of lock model.
- c. Edge of plate to vertical centerline of key cylinder and grip: 2".
- d. Top of plate to horizontal centerline of grip: 10".

E. Available Manufacturers:

1. Hager Companies (HAG).
2. Hiawatha (HIW).
3. Burns (BRN).
4. IVES Hardware; an Allegion Company (IVE).
5. Rockwood Manufacturing Company (ROC).
6. Trimco (TRI).

## 2.15 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 & 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, unless doors have sufficient hardwood or other blocking to properly secure all required screws.
  - 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-sizable 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.
  - G. 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. If tri-pack closers are furnished for regular arm applications, remove parallel arm shoe from closer box before delivering to job.
    3. Parallel Arm closers are to be manufacturer's double forged rigid models.
  - H. Available Manufacturers and Series for Rack and Pinion Surface Closers:
    1. Hager (HAG): 5100 series.
    2. LCN Closers; an Allegion Company (LCN): 4040XP series.
    3. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SAR): 281 series.

## 2.16 AUTOMATIC DOOR OPERATORS

- A. Standard: Comply with BHMA A156.19.
- B. Performance Requirements:
  - 1. Not more than 15 lbf (67 N applied) 1 inch (25 mm) from latch edge of door to prevent stopped door from opening or closing.
  - 2. If power fails, not more than 30 lbf (133 N applied) 1 inch (25 mm) from latch edge of door to manually set door in motion.
- C. Operation: Power opening and spring closing. When not in automatic mode, door operator shall function as manual door closer, with or without electrical power.
- D. Operating System: Electromechanical.
- E. Microprocessor Control Unit: Solid-state controls.
- F. Features:
  - 1. Adjustable opening and closing speed.
  - 2. Adjustable opening and closing force.
  - 3. Adjustable backcheck.
  - 4. Adjustable latch speed.
  - 5. Adjustable hold-open time of not less than 0 to 30 seconds.
  - 6. Adjustable time delay.
  - 7. Adjustable acceleration.
  - 8. Obstruction recycle.
- G. Mounting: Surface mounted to top jamb.
- H. Mounting Accessories: Provide shoes, brackets, drop plates, spacers, etc., as needed for proper mounting of operators and arms to door and frame.
- I. Activation Devices
  - 1. Wall Push-Plate Switch: Semiflush, wall or jamb mounted, door control switch; of material, size, and shape indicated; and actuator mounted in recessed junction box. Provide engraved message as indicated.
  - 2. Material: Stainless steel.
  - 3. Message: International symbol of accessibility and "Push to Open."
  - 4. Available Manufacturers for Activation Devices
    - a. BEA (BEA).
    - b. LCN Closers; an Allegion Company (LCN).
    - c. Wikk Industries (WIK).
- J. Automatic Door Operator Signage:
  - 1. Comply with BHMA A156.19.
  - 2. Consult Architect before applying signage to door.
- K. Available manufacturers for Automatic Door Operators:
  - 1. LCN Closers; an Allegion Company (LCN); Senior Swing.



## 2.17 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 bevel head screws. Plates countersunk for bevel head 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 Allegion Company (IVE).
  - 3. Rockwood Manufacturing Company (ROC).
  - 4. Trimco (TRI).

## 2.18 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).
    - b. IVES Hardware; an Allegion Company (IVE).
    - c. Rockwood Manufacturing Company (ROC).
    - d. Trimco (TRI).
- B. Wall and Floor 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: Hager 327W or approved equal.

## 2.19 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 Allegion Company (GLY).
3. Hager (HAG).
4. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).
5. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SAR).

## 2.20 ELECTROMAGNETIC DOOR HOLDERS

- A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate 12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button. **All metal covers.**
- B. **Accessories: Provide holders of proper configuration for wall and clearance conditions. Provide factory extension rods as required for proper clearance and engagement.**
- C. Available Manufacturers:
  1. Hager (HAG).

## 2.21 SILENCERS

- A. Though not listed in the hardware sets, provide silencers for Hollow Metal and Wood Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame; three for single doors, two for paired openings.
- B. Available Manufacturers:
  1. Glynn-Johnson; an Allegion Company (GLY).
  2. Hager Companies (HAG).
  3. IVES Hardware; an Allegion Company (IVE).
  4. McKinney Products Company; an ASSA ABLOY Group company (MCK).
  5. Rockwood Manufacturing Company (ROC).
  6. Trimco (TRI).

## 2.22 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. If hardware is to be attached to the frame and would interfere with the gasketing, then provide hardware compatible gasketing that does not need to be cut for the mounting of hardware.
  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 exterior hollow metal doors, or as required for sound attenuation, forming seal with threshold or floor 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 Category G&H seals at jambs and meeting edges. If Category H seals are indicated in hardware sets, provide Cat G seals in addition to the Category H 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. Mullion Gasketing: Sealing up to 1/4" gaps, 4 vanes, adhesive backed, collapsible to 1/32", black. Basis of Design: DHSI (DHS) Model MS-SA/75 x BK.
- H. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- I. Jamb Gasketing Materials:
1. Adhesive Seals. As specified in hardware sets or approved equal.
  2. Screwed-on weatherstrip and sweeps. Neoprene.
  3. Panic type thresholds. Neoprene.
- J. Available Manufacturers for Jamb Gaskets (provided they provide items with neoprene inserts):
1. Hager Companies (HAG).
  2. National Guard Products (NGP).
  3. Pemko Manufacturing Co. (PEM).
  4. Reese Enterprises (REE).
  5. Zero International (ZER).

## 2.23 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: 1/4-20 machine screws and expansion anchors.
- E. Gasketing material: At panic-type thresholds: neoprene.
- F. Available Manufacturers (provided they provide items with neoprene inserts):
  1. Hager Companies (HAG).
  2. National Guard Products (NGP).
  3. Pemko Manufacturing Co. (PEM).
  4. Reese Enterprises (REE).
  5. Zero International (ZRO).

## 2.24 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.**

## 2.25 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 PRIOR TO INSTALLATION OF DOORS AND HARDWARE

- A. Prior to installing doors, examine 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. Verify frames are plumb, level, square and dimensioned properly for the installation of doors.
- 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: Comply with DHI A115 Series.
  - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.
- B. Wood Doors: Comply with DHI A115-W Series.

## 3.3 INSTALLATION

- A. Low-energy Automatic Door Operators:
  - 1. **Installer is to have current AAADM certification to install automatic door operators and actuating systems.**
- B. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - 3. Pulls: locate pulls as directed by Architect.
  - 4. Push Plates: Top edge of plate: 53" AFF.
  - 5. Pull Plates: Top edge of plate: 50" AFF. Centerline of Grip: 40" AFF.
- C. Mounting Locations:
  - 1. **Continuous Hinges: Locate flush with top of door and 2" higher than the bottom of the door.**
  - 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 or so as to interface with specified wall stops and holders. When used with closers, template**

**and locate overhead stops so that closer arm does not fully extend and bottom out. These functionality requirements override any degree of opening information in the specifications or submittals.**

- D. 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. Hardware designed for mortised installation shall be mortised in flush with adjoining surfaces. 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.
- E. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule. Document cross-indexing per manufacturer's instructions.
- F. Boxed Power Supplies: Locate power supplies as directed by FCPS Electronics Foreman.
- G. **Weatherstrip and Gasketing with Metal Retainers: Fit up as needed for neat appearance with no gaps between retainers or bulbs. Mitre cut weatherstrip for flush fitup in corners.**
- H. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants." **Position for complete seal with bottom of doors with no penetration of air or daylight.**

### 3.4 FIELD QUALITY CONTROL

- A. See 087100-1.4.B for Allowance for Door Hardware Inspection Services.

### 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. Per the ADA, 5 lbf is the maximum allowed on an interior non-rated door; 8.5 lbf is the maximum allowed on a non-rated exterior door. On smoke or fire rated doors, adjust the closer to the minimum spring power needed to reliably latch the door. If the Installer is having difficulty properly adjusting the closer due to improper door-frame clearances or air pressure differentials, they are to immediately notify the Contractor so that corrections may be quickly made.
- 4. Adjust backcheck to not be noticeable when door is moving slowly, but to slow door down when accelerating due to human force or wind 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 SCHEDULE

**Set Prefixes:**

- A Indicates Electronic Exit Alarms**
- C Indicates Electronic Hardware interfaced with Card Reader.**
- D Monitored for door position only.**
- E Indicates Electronic Hardware not interfaced with Card Reader.**
- F Indicates FRP door.**
- M Indicates magnetic door holders.**
- W Indicates windstorm door.**
- No prefix indicates mechanical hardware only.**

**Hardware Set ACF01**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

|                                 |  |     |  |
|---------------------------------|--|-----|--|
| (1) Continuous Hinge            |  | 628 |  |
| (2) Flush Pull                  |  | 628 |  |
| (2) Adjustable Door Bottom Seal |  | 628 |  |
| (1) Meeting Edge Seal Set       |  | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

|  |                            |       |      |
|--|----------------------------|-------|------|
| (1) Key Removable Mullion                            | 4900T x 4953               | 601   | HAG  |
| Note: Field paint mullion to match frame color.      |                            |       |      |
| (1) Panic Device, Rim, 01                            | 4501-RIM-LD x Flush Endcap | 630   | HAG  |
| (1) Rim Cylinder Housing (for key removable mullion) |                            | 626   | BES  |
| (1) Mortise Cylinder Housing (for exit alarm)        |                            | 626   | BES  |
| (2) Key Cylinder Core                                | SFIC, 7-pin Cormax         | 626   | BES  |
| (2) Closer, w/Spring Stop                            | 5100 x 5955 x 5111 x 5113  | 689   | HAG  |
| (1) Cat H Adhesive Mullion Seal/Mute MS-SA/75        |                            | Black | DHSI |
| (1) 1/4" Saddle Threshold                            | 413S x RCE                 | 628   | HAG  |

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- |                                |                         |     |  |
|--------------------------------|-------------------------|-----|--|
| (1) Continuous Hinge           | (2)EPT Prep (LHRB door) | 628 |  |
| (1) Concealed Card Reader Prep | (LHRB door)             |     |  |

**Electrified Items Furnished by Contract Hardware Supplier:**

- |                                 |                      |     |     |
|---------------------------------|----------------------|-----|-----|
| (2) Jamb-to-Door Power Transfer | 2-679-0623 (10 Wire) | 628 | HAG |
|---------------------------------|----------------------|-----|-----|

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- |                                |                                       |       |     |
|--------------------------------|---------------------------------------|-------|-----|
| (1) Panic Device, Rim, 01      | 4501-RIM x MLRX x Flush Endcap (LHRB) | 630   | HAG |
| (1) Power Supply               | 2903                                  |       | HAG |
| (1) Hard-wired Exit Alarm Kit  | EAX-2520F x SI                        | White | DTX |
| (2) Door Position Switch, DPDT | 1335-1-DPDT                           | 630   | ACS |

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

Note: Locate inside LHRB door leaf.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 4' of LHRB (RHRB at Door G100B1-B) side jamb, 44" AFF. Provide conduit with pull strings from power supply to (2) power transfers in LHRB side jamb, to the door contacts on the top jamb, and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When exit alarm is enabled, free egress with audible alarm; ingress by card which retracts latch on LHRB panic device and shunts alarm; door relocks and exit alarm resets after time delay. When exit alarm is disabled, free egress without audible alarm; ingress by card. Opening is monitored for door position and request to exit signal from LHRB panic device.

**Hardware Set ACF01A**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- |                                 |  |     |  |
|---------------------------------|--|-----|--|
| (1) Continuous Hinge            |  | 628 |  |
| (2) Flush Pull                  |  | 628 |  |
| (2) Adjustable Door Bottom Seal |  | 628 |  |
| (1) Meeting Edge Seal Set       |  | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- |                           |              |     |     |
|---------------------------|--------------|-----|-----|
| (1) Key Removable Mullion | 4900T x 4953 | 601 | HAG |
|---------------------------|--------------|-----|-----|
- Note: Field paint mullion to match frame color.
- |   |                            |       |      |
|---|----------------------------|-------|------|
| (1) Panic Device, Rim, 01                                 | 4501-RIM-CD x Flush Endcap | 630   | HAG  |
| (1) Rim Cylinder Housing (for key removable mullion)      |                            | 626   | BES  |
| (2) Mortise Cylinder Housing (for exit alarm and dogging) |                            | 626   | BES  |
| (3) Key Cylinder Core                                     | SFIC, 7-pin Cormax         | 626   | BES  |
| (2) Closer, w/Spring Stop                                 | 5100 x 5955 x 5111 x 5113  | 689   | HAG  |
| (1) Cat H Adhesive Mullion Seal/Mute                      | MS-SA/75                   | Black | DHSI |
| (1) ¼" Saddle Threshold                                   | 413S x RCE                 | 628   | HAG  |

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- |                                |                         |     |  |
|--------------------------------|-------------------------|-----|--|
| (1) Continuous Hinge           | (2)EPT Prep (LHRB door) | 628 |  |
| (1) Concealed Card Reader Prep | (LHRB door)             |     |  |

**Electrified Items Furnished by Contract Hardware Supplier:**

- |                                 |                      |     |     |
|---------------------------------|----------------------|-----|-----|
| (2) Jamb-to-Door Power Transfer | 2-679-0623 (10 Wire) | 628 | HAG |
|---------------------------------|----------------------|-----|-----|

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- |                                |                                       |       |     |
|--------------------------------|---------------------------------------|-------|-----|
| (1) Panic Device, Rim, 01      | 4501-RIM x MLRX x Flush Endcap (LHRB) | 630   | HAG |
| (1) Power Supply               | 2903                                  |       | HAG |
| (1) Hard-wired Exit Alarm Kit  | EAX-2520F x SI                        | White | DTX |
| (2) Door Position Switch, DPDT | 1335-1-DPDT                           | 630   | ACS |

**Electrified Items Furnished by Security Supplier:**



- (1) Card Reader, narrow jamb-mount By Security Supplier.

Note: Locate inside LHRB door leaf.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 4' of LHRB side jamb, 44" AFF. Provide conduit with pull strings from power supply to (2) power transfers in LHRB side jamb, to the door contacts on the top jambs of Doors G100A1-C and G100A1-D, and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key and is shared by Doors G100A1-C and G100A1-D. When exit alarm is enabled, free egress with audible alarm; ingress by card which retracts latch on LHRB panic device and shunts alarm; door relocks and exit alarm resets after time delay. When exit alarm is disabled, free egress without audible alarm; ingress by card. Opening is monitored for door position and request to exit signal from LHRB panic device.

**Hardware Set ACF02**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge 628
- (2) Flush Pull 628
- (2) Adjustable Door Bottom Seal 628
- (1) Meeting Edge Seal Set 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Key Removable Mullion 4900T x 4953 601 HAG  
Note: Field paint mullion to match frame color.
- (1) Panic Device, Rim, 01 4501-RIM-LD x Flush Endcap 630 HAG
- (1) Rim Cylinder Housing (for key removable mullion) 626 BES
- (1) Mortise Cylinder Housing (for exit alarm) 626 BES
- (3) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (1) Closer, w/Spring Stop 5100 x 5955 x 5111 x 5113 689 HAG
- (1) Cat H Adhesive Mullion Seal/Mute MS-SA/75 Black DHSI
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge (2)EPT Prep (LHRB door) 628
- (1) Concealed Card Reader Prep (LHRB door)

**Electrified Items Furnished by Contract Hardware Supplier:**

- (2) Jamb-to-Door Power Transfer 2-679-0623 (10 Wire) 628 HAG

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- (1) Panic Device, Rim, 01 4501-RIM x MLRX x Flush Endcap (LHRB) 630 HAG
- (1) Elect Automatic Door Operator Senior Swing (LHRB) 628 LCN

Note 1: Operator Supplier/Installer shall mount and wire the keyswitch below onto the top panel of the operator housing to control and indicate by LED the 110V service to the operator. Enable Push-n-Go feature.

- (1) Power Supply 2903 HAG
- (1) Hard-wired Exit Alarm Kit EAX-2520F x SI White DTX
- (2) Door Position Switch, DPDT 1335-1-DPDT 630 ACS

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

Note: Locate inside LHRB door leaf.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 4’ of LHRB side jamb, 44” AFF. Provide conduit with pull strings from power supply to (2) power transfers in LHRB side jamb, to the door contacts on the top jamb, and to exit alarm. Provide a 110V common On/Off light switch to control the 120VAC power to the automatic door operator; mount this switch on the top of the housing of the automatic door operator.

**System Function:**

Exit alarm is enabled/disabled by key. When exit alarm is enabled, free egress with audible alarm; pushing on door triggers Push-N-Go feature so that door automatically opens for ADA egress; ingress by card which retracts latch on LHRB panic device, shunts alarm, and signals operator to open the LHRB door leaf; door closes and relocks and exit alarm resets after time delay. When exit alarm is disabled, free egress without audible alarm; pushing on door triggers Push-N-Go feature so that door automatically opens for ADA egress; ingress by card which retracts latch on LHRB panic device and signals operator to open the LHRB door leaf; door closes and relocks and exit alarm resets after time delay. Opening is monitored for door position and request to exit signal from LHRB panic device.

**Hardware Set ACF03**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Flush Pull 628
- (1) Adjustable Door Bottom Seal 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Mortise Cylinder Housing (for exit alarm) 626 BES
- (1) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (1) Closer, w/Spring Stop/HO 5100 1-6 ALM HDHOCS FC x 5110 x 5111 x 5113 689 HAG
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge (2)EPT Prep 628
- (1) Concealed Card Reader Prep

**Electrified Items Furnished by Contract Hardware Supplier:**

- (2) Jamb-to-Door Power Transfer 2-679-0623 (10 Wire) 628 HAG

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- (1) Panic Device, Rim, 01 4501-RIM x MLRX x Flush Endcap 630 HAG
- (1) Power Supply 2903 HAG
- (1) Hard-wired Exit Alarm Kit EAX-2520F x SI White DTX
- (1) Door Position Switch, DPDT 1335-1-DPDT 630 ACS

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

Note: Locate inside door leaf.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 2’ of strike jamb, 44” AFF. Provide conduit with pull strings from power supply to (2) power transfers in hinge side jamb, to the door contact on the top jamb, and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When exit alarm is enabled, free egress with audible alarm; ingress by card which retracts latch on panic device and shunts alarm; door relocks and exit alarm resets after time delay. When exit alarm is disabled, free egress without audible alarm; ingress by card. Opening is monitored for door position and request to exit signal from panic device.

**Hardware Set AE01**

**Electrified Items Furnished by Contract Hardware Supplier:**

- (1) Door Contact, Exterior OHD QS 911MA QSW

Note: Balance of non-electrified and electrified items by overhead door supplier.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide an electrical junction box up high out of reach for use of Security Supplier and a single-gang box near the door contact on the floor; join the flex conduit whip that comes with the door contact to the single-gang box. Provide conduit with pull string from door contact on floor to electrical junction box. Provide conduit with pull string from door contact to exit alarm specified for Door C118-D; see Hardware Set AEF03.

**System Function:**

See System Function for Hardware Set AEF03.

**Hardware Set AE02****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                       |                      |     |     |
|-----|-----------------------|----------------------|-----|-----|
| (3) | Butt Hinges           | BB1191 4.5 x 4.5     | 630 | HAG |
| (1) | Storeroom Lock        | 3880-SECT-ARC        | 626 | HAG |
| (2) | Mortise Cylinder      | Cormax               | 626 | BES |
| (2) | SFIC Cylinder Core    | Cormax               | 626 | BES |
| (1) | Closer, w/Spring Stop | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate            | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Overhead Rain Drip    | 810S                 | 628 | HAG |
| (1) | Cat H Jamb Seal Set   | 769C                 | 628 | REE |

Note 1: Apply jamb seals to all four sides of four-sided frame.

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |                |       |     |
|-----|----------------------------|----------------|-------|-----|
| (1) | Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX |
| (1) | Door Position Switch, DPDT | 1335-1-DPDT    | 630   | ACS |
| (1) | Power Supply               | 2903           |       | HAG |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 2' of strike jamb, 44" AFF. Provide conduit with pull strings from power supply to door contact on top jamb and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress from roof into building with audible alarm; ingress with alarm by key from building onto roof. When disabled, free egress from roof into building; ingress by key from building onto roof. Opening is monitored for door position.

**Hardware Set AEF01****Non-electrified Items Furnished by FRP Door Manufacturer:**

|     |                             |     |  |
|-----|-----------------------------|-----|--|
| (2) | Continuous Hinge            | 628 |  |
| (2) | Flush Pull                  | 628 |  |
| (2) | Adjustable Door Bottom Seal | 628 |  |
| (1) | Meeting Edge Seal Set       | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |   |   |       |      |
|-----|---|---|-------|------|
| (1) | Key Removable Mullion                           | 4900T x 4953                              | 601   | HAG  |
|     | Note: Field paint mullion to match frame color. |   |       |      |
| (2) | Panic Device, Rim, 01                           | 4501-RIM-LD x Flush Endcap                | 630   | HAG  |
| (1) | Rim Cylinder Housing (for mullion)              |   | 626   | BES  |
| (1) | Mortise Cylinder Housing (for exit alarm)       |   | 626   | BES  |
| (2) | Key Cylinder Core                               | SFIC, 7-pin Cormax                        | 626   | BES  |
| (2) | Closer, w/Spring Stop                           | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75       |   | Black | DHSI |
| (1) | ¼" Saddle Threshold                             | 413S x RCE                                | 628   | HAG  |

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |                |       |     |
|-----|----------------------------|----------------|-------|-----|
| (1) | Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX |
| (2) | Door Position Switch, DPDT | 1335-1-DPDT    | 630   | ACS |
| (1) | Power Supply               | 2903           |       | HAG |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 6' of LHRB side jamb, 44" AFF. Provide conduit with pull strings from power supply to door contacts on top jamb and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress with audible alarm; no ingress. When disabled, free egress without audible alarm; no ingress. Opening is monitored for door position.

**Hardware Set AEF01A****Non-electrified Items Furnished by FRP Door Manufacturer:**

|     |                             |     |  |
|-----|-----------------------------|-----|--|
| (2) | Continuous Hinge            | 628 |  |
| (2) | Flush Pull                  | 628 |  |
| (2) | Adjustable Door Bottom Seal | 628 |  |
| (1) | Meeting Edge Seal Set       | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |   |   |       |      |
|-----|---|---|-------|------|
| (1) | Key Removable Mullion                                 | 4900T x 4953                              | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.       |   |       |      |
| (2) | Panic Device, Rim, 01                                 | 4501-RIM-CD x Flush Endcap                | 630   | HAG  |
| (1) | Rim Cylinder Housing (for mullion)                    |   | 626   | BES  |
| (3) | Mortise Cylinder Housing (for exit alarm and dogging) |   | 626   | BES  |
| (4) | Key Cylinder Core                                     | SFIC, 7-pin Cormax                        | 626   | BES  |
| (2) | Closer, w/Spring Stop                                 | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75             |   | Black | DHSI |
| (1) | ¼" Saddle Threshold                                   | 413S x RCE                                | 628   | HAG  |

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |                |       |     |
|-----|----------------------------|----------------|-------|-----|
| (1) | Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX |
| (2) | Door Position Switch, DPDT | 1335-1-DPDT    | 630   | ACS |
| (1) | Power Supply               | 2903           |       | HAG |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 4' of LHRB side jamb, 44" AFF. Provide conduit with pull strings from power supply to door contacts on top jamb and to exit alarm.

**System Function:**

Exit alarm shared by Doors G103-C and G103-D is enabled/disabled by key. When enabled, free egress with audible alarm; no ingress unless panic devices are dogged down. When disabled, free egress without audible alarm; no ingress unless panic devices are dogged down. Openings are monitored for door position.

**Hardware Set AEF01B****Non-electrified Items Furnished by FRP Door Manufacturer:**

|     |                             |     |  |
|-----|-----------------------------|-----|--|
| (2) | Continuous Hinge            | 628 |  |
| (2) | Adjustable Door Bottom Seal | 628 |  |
| (1) | Meeting Edge Seal Set       | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |  |   |       |      |
|-----|--|---|-------|------|
| (1) | Key Removable Mullion                            | 4900T x 4953                              | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.  |   |       |      |
| (1) | Panic Device, Rim, 03                            | 4501-RIM-LD x Flush Endcap x 45PPN        | 630   | HAG  |
| (1) | Panic Device, Rim, 01                            | 4501-RIM-LD x Flush Endcap                | 630   | HAG  |
| (2) | Rim Cylinder Housing (for mullion and exit trim) |   | 626   | BES  |
| (1) | Mortise Cylinder Housing (for exit alarm)        |   | 626   | BES  |
| (3) | Key Cylinder Core                                | SFIC, 7-pin Cormax                        | 626   | BES  |
| (2) | Closer, w/Spring Stop                            | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75        |   | Black | DHSI |
| (1) | ¼" Saddle Threshold                              | 413S x RCE                                | 628   | HAG  |

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |                |       |     |
|-----|----------------------------|----------------|-------|-----|
| (1) | Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX |
| (2) | Door Position Switch, DPDT | 1335-1-DPDT    | 630   | ACS |
| (1) | Power Supply               | 2903           |       | HAG |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 6' of LHRB side jamb, 44" AFF. Provide conduit with pull strings from power supply to door contacts on top jamb and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress with audible alarm; ingress by key. When disabled, free egress without audible alarm; ingress by key. Opening is monitored for door position.

**Hardware Set AEF02**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge 628
- (1) Flush Pull 628
- (1) Adjustable Door Bottom Seal 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Panic Device, Rim, 01 4501-RIM-LD x Flush Endcap 630 HAG
- (1) Mortise Cylinder Housing (for exit alarm) 626 BES
- (1) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (1) Closer, w/Spring Stop 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 689 HAG
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

- (1) Hard-wired Exit Alarm Kit EAX-2520F x SI White DTX
- (1) Door Position Switch, DPDT 1335-1-DPDT 630 ACS
- (1) Power Supply 2903 HAG

**Electrified Items Furnished by Video-intercom Supplier:**

- (1) Video-intercom system with monitor stations at desk in Office B115A.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 2’ of strike jamb, 44” AFF. Provide conduit with pull strings from power supply to door contact on top jamb and to exit alarm. Provide doorbell system with chime in ceiling in middle of FRC B115.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress with audible alarm; no ingress. When disabled, free egress without audible alarm; no ingress. Opening is monitored for door position. Video-intercom and doorbell systems notify tenants to go to door for client.



**Hardware Set AEF03**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge 628
- (1) Flush Pull 628
- (1) Adjustable Door Bottom Seal 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Panic Device, Rim, 01 4501-RIM-LD x Flush Endcap 630 HAG
- (1) Mortise Cylinder Housing (for exit alarm) 626 BES
- (1) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (1) Closer, w/Spring Stop 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 689 HAG
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

- (1) Hard-wired Exit Alarm Kit EAX-2520F x SI White DTX
- (1) Door Position Switch, DPDT 1335-1-DPDT 630 ACS
- (1) Power Supply 2903 HAG

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 3’ of strike jamb, 44” AFF. Provide conduit with pull strings from power supply to door contact on top jamb and to exit alarm and to door contact for Door C118-C.

**System Function:**

Exit alarm is enabled/disabled by key and is shared by Doors C118-C and C118-D. When enabled, free egress through Door C118-D with audible alarm; no ingress. When disabled, free egress through Door C118-D without audible alarm and Overhead Door C118-C can be opened without audible alarm; no ingress. Openings are monitored for door position.

**Hardware Set AEF03A****Non-electrified Items Furnished by FRP Door Manufacturer:**

- |                                 |     |
|---------------------------------|-----|
| (1) Continuous Hinge            | 628 |
| (1) Flush Pull                  | 628 |
| (1) Adjustable Door Bottom Seal | 628 |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- |   |   |     |     |
|---|---|-----|-----|
| (1) Panic Device, Rim, 01                                 | 4501-RIM-CD x Flush Endcap                | 630 | HAG |
| (2) Mortise Cylinder Housing (for exit alarm and dogging) |   | 626 | BES |
| (2) Key Cylinder Core                                     | SFIC, 7-pin Cormax                        | 626 | BES |
| (1) Closer, w/Spring Stop                                 | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689 | HAG |
| (1) ¼" Saddle Threshold                                   | 413S x RCE                                | 628 | HAG |

**Non-electrified Items by Aluminum Frame Supplier:**

- |                   |  |  |  |
|-------------------|--|--|--|
| (1) Jamb Seal Set |  |  |  |
|-------------------|--|--|--|

**Electrified Items Furnished by Contract Hardware Supplier:**

- |                                |                |       |     |
|--------------------------------|----------------|-------|-----|
| (1) Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX |
| (1) Door Position Switch, DPDT | 1335-1-DPDT    | 630   | ACS |
| (1) Power Supply               | 2903           |       | HAG |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 1' of strike jamb, 44" AFF. Provide conduit with pull strings from power supply to door contact on top jamb and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress with audible alarm; no ingress unless panic device is dogged down. When disabled, free egress without audible alarm; no ingress unless panic device is dogged down. Opening is monitored for door position.

**Hardware Set AEF04**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (2) Continuous Hinge 628
- (2) Flush Pull 628
- (2) Adjustable Door Bottom Seal 628
- (1) Meeting Edge Seal Set 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Key Removable Mullion 4900T x 4953 601 HAG  
Note: Field paint mullion to match frame color.
- (2) Panic Device, Rim, 01 4501-RIM-CD x Flush Endcap 630 HAG
- (1) Rim Cylinder Housing (for key removable mullion) 626 BES
- (2) Mortise Cylinder Housing (for dogging) 626 BES
- (3) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (2) Closer, w/Spring Stop 5100 x 5955 x 5111 x 5113 689 HAG
- (1) Cat H Adhesive Mullion Seal/Mute MS-SA/75 Black DHSI
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by Contract Hardware Supplier:**

- (2) Door Position Switch, DPDT 1335-1-DPDT 630 ACS

**Furnished by Electrical Contractor:**

Note 1: See Hardware Set ACF01A for Door G100A1-D (Hardware Set AEF01A for Door G103-D).

**System Function:**

See Hardware Set ACF01A for exit alarm shared with Door G100A1-D (Hardware Set AEF01A for exit alarm shared with Door G103-D). When exit alarm is enabled, free egress with audible alarm; no ingress. When exit alarm is disabled, free egress without audible alarm; free ingress if panic devices are dogged down. Opening is monitored for door position.

**Hardware Set AEW01****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |   |                          |     |     |
|-----|---|--------------------------|-----|-----|
| (2) | Continuous Hinges                         | 224HD x UL               | 628 | IVE |
| (2) | Panic Device, SVR, 01                     | WS-9927EO x 990EO x 304L | 626 | VON |
| (1) | Mortise Cylinder Housing (for exit alarm) |                          | 626 | BES |
| (1) | Key Cylinder Core                         | SFIC, 7-pin Cormax       | 626 | BES |
| (2) | Closer, w/Spring Stop                     | 4040XP SCUSH             | 689 | LCN |
| (2) | Kick Plate/Latch Guard                    | WS-LGO x 2" LDW          | 630 | VON |
| (1) | Cat H Astragal Set                        | 8195                     | 628 | ZER |
| (1) | Cat H Jamb Seal Set                       | 8803AA                   | 628 | ZER |
| (2) | Door Bottom Seal                          | 111                      | 628 | ZER |
| (1) | ¼" Saddle Threshold                       | 545B x RCE               | 628 | ZER |

Note 1: Coordinate proper door undercut for threshold, bottom latch and Von Duprin 304L bottom strike.

Note 2: This hardware set includes products listed for use as part of a complete tested assembly using Allegion Steelcraft windstorm doors and frame. If using doors and frames by another manufacturer, then the hardware must be part of a complete tested assembly for use with those doors and frames.

Note 3: Contractor to notch threshold and grout in 304L bottom strikes for exit device latches.

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |                |       |         |
|-----|----------------------------|----------------|-------|---------|
| (1) | Hard-wired Exit Alarm Kit  | EAX-2520F x SI | White | DTX     |
| (2) | Door Position Switch, DPDT | 2757D          | 630   | Sentrol |
| (1) | Power Supply               | 2903           |       | HAG     |

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 4' of LHRB side jamb, 44" AFF. Provide conduit with pull strings from power supply to the door contacts on the top jamb and to exit alarm.

**System Function:**

Exit alarm is enabled/disabled by key. When enabled, free egress with audible alarm; no ingress. When disabled, free egress without audible alarm; no ingress. Opening is monitored for door position.

**Hardware Set C01****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5    | 652 | HAG |
| (1) | Mortise Cylinder Housing |                     | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Closer, w/Stop           | 5100 1-6 ALM HDS FC | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

|   |                             |                    |      |     |
|---|-----------------------------|--------------------|------|-----|
| (1)   | Jamb-to-Door Power Transfer | 2-679-0623         | US28 | HAG |
| (1)   | Electric Mortise Lockset    | 3880EU-RX-SECT-ARC | 626  | HAG |
| Note: Electric mortise lock has on-board REX monitoring contacts. |                             |                    |      |     |
| (1)   | Power Supply                | 2908               |      | HAG |
| (1)   | Door Position Switch, DPDT  | 1335-1-DPDT        | 630  | ACS |

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, single-gang By Security Supplier.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide single-gang flush mounting box on pull side of opening within 12" of strike jamb, 44" AFF. Provide conduit with pull strings from power supply to card reader and to door contact on top jamb.

**System Function:**

Free egress. Ingress by card or key. Opening is monitored for request-to-exit of inside lever and door position.

**Hardware Set C01A****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5    | 652 | HAG |
| (1) | Mortise Cylinder Housing |                     | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Closer, w/Stop           | 5100 1-6 ALM HDS FC | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

|   |                             |                    |      |     |
|---|-----------------------------|--------------------|------|-----|
| (1)   | Jamb-to-Door Power Transfer | 2-679-0623         | US28 | HAG |
| (1)   | Electric Mortise Lockset    | 3880EU-RX-SECT-ARC | 626  | HAG |
| Note: Electric mortise lock has on-board REX monitoring contacts. |                             |                    |      |     |
| (1)   | Power Supply                | 2908               |      | HAG |
| (1)   | Door Position Switch, DPDT  | 1335-1-DPDT        | 630  | ACS |

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide conduit with pull strings from power supply to card reader on pull side of strike jamb, 44" AFF and to door contact on top jamb.

**System Function:**

Free egress. Ingress by card or key. Opening is monitored for request-to-exit of inside lever and door position.

**Hardware Set C02****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                          |   |     |     |
|-----|--------------------------|---|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5                          | 652 | HAG |
| (1) | Mortise Cylinder Housing |   | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax                        | 626 | BES |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

|   |                             |                    |      |     |
|---|-----------------------------|--------------------|------|-----|
| (1)   | Jamb-to-Door Power Transfer | 2-679-0623         | US28 | HAG |
| (1)   | Electric Mortise Lockset    | 3880EU-RX-SECT-ARC | 626  | HAG |
| Note: Electric mortise lock has on-board REX monitoring contacts. |                             |                    |      |     |
| (1)   | Power Supply                | 2908               |      | HAG |
| (3)   | Pushbutton Station          | 5236 x 2P25 x 2L   | 628  | DTR |

Note: Under-the-desk-mount Pushbutton Station has (2) DPDT momentary pushbutton and (21) red/green LED's. Locate (2) pushbutton stations under desk in Reception B103 and (1) under desk in Attendance B104: all as directed by Architect.

|     |                            |             |     |     |
|-----|----------------------------|-------------|-----|-----|
| (1) | Door Position Switch, DPDT | 1335-1-DPDT | 630 | ACS |
|-----|----------------------------|-------------|-----|-----|

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide conduit with pull strings from power supply to card reader, to power transfer in side-jamb, to door contact on top jamb, to power supply listed for Door B100A1-B (Hardware Set EF01), and to all (3) pushbutton stations listed in this hardware set.

**System Function:**

Free egress. Ingress by card or key or by any one of the (3) pushbutton stations (pushbutton on left side of each station) listed in this hardware set. Opening is monitored for request-to-exit of inside lockset lever and door position. LED associated with pushbutton on left side of station indicates Red for locked and Green for unlocked. See System Function description in Hardware Set E01 for function of pushbuttons and LED's on right side of the (3) pushbutton stations listed in this hardware set.

**Hardware Set CF01**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge 628
- (2) Flush Pull 628
- (2) Adjustable Door Bottom Seal 628
- (1) Meeting Edge Seal Set 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Key Removable Mullion 4900T x 4953 601 HAG  
Note: Field paint mullion to match frame color.
- (1) Panic Device, Rim, 01 4501-RIM-CD x Flush Endcap 630 HAG
- (1) Rim Cylinder Housing (for key removable mullion) 626 BES
- (1) Mortise Cylinder Housing (for dogging) 626 BES
- (2) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (2) Closer, w/Spring Stop 5100 x 5955 x 5111 x 5113 689 HAG
- (1) Cat H Adhesive Mullion Seal/Mute MS-SA/75 Black DHSI
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge (2)EPT Prep (LHRB door) 628
- (1) Concealed Card Reader Prep (LHRB door)

**Electrified Items Furnished by Contract Hardware Supplier:**

- (2) Jamb-to-Door Power Transfer 2-679-0623 (10 Wire) 628 HAG

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- (1) Panic Device, Rim, 01 4501-RIM x MLRX x Flush Endcap (LHRB) 630 HAG
- (1) Power Supply 2903 HAG
- (2) Door Position Switch, DPDT 1335-1-DPDT 630 ACS

**Electrified Items Furnished by Security Supplier:**

- (1) Card Reader, narrow jamb-mount By Security Supplier.

Note: Locate inside LHRB door leaf.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide conduit with pull strings from power supply to (2) power transfers in LHRB side jamb, and to the door contacts on the top jamb.

**System Function:**

System Function: Free egress at all times. Ingress by card, which retract latch on LHRB panic device; door relocks after time delay.

**Hardware Set CF02****Non-electrified Items Furnished by FRP Door Manufacturer:**

- |                                 |  |     |  |
|---------------------------------|--|-----|--|
| (1) Flush Pull                  |  | 628 |  |
| (1) Adjustable Door Bottom Seal |  | 628 |  |

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- |   |                           |     |     |
|---|---------------------------|-----|-----|
| (1) Mortise Cylinder Housing (for exit alarm) |                           | 626 | BES |
| (1) Key Cylinder Core                         | SFIC, 7-pin Cormax        | 626 | BES |
| (1) Closer, HD Parallel Arm                   | 5100 1-6 ALM HD FC x 5113 | 689 | HAG |
| (1) Wall Stop/Holder                          | 327W                      | 626 | HAG |
- Note: Locate approx. 4" down and in from top lock corner of door.
- |                         |            |     |     |
|-------------------------|------------|-----|-----|
| (1) ¼" Saddle Threshold | 413S x RCE | 628 | HAG |
|-------------------------|------------|-----|-----|

**Non-electrified Items by Aluminum Frame Supplier:**

- |                   |  |  |  |
|-------------------|--|--|--|
| (1) Jamb Seal Set |  |  |  |
|-------------------|--|--|--|

**Electrified Items Furnished by FRP Door Manufacturer:**

- |                                |             |     |  |
|--------------------------------|-------------|-----|--|
| (1) Continuous Hinge           | (2)EPT Prep | 628 |  |
| (1) Concealed Card Reader Prep |             |     |  |

**Electrified Items Furnished by Contract Hardware Supplier:**

- |                                 |                      |     |     |
|---------------------------------|----------------------|-----|-----|
| (2) Jamb-to-Door Power Transfer | 2-679-0623 (10 Wire) | 628 | HAG |
|---------------------------------|----------------------|-----|-----|

Note: (1) power transfer in to get wires to the electrified exit devices. The top EPT is to get wires to the cardreader.

- |                                |                                |     |     |
|--------------------------------|--------------------------------|-----|-----|
| (1) Panic Device, Rim, 01      | 4501-RIM x MLRX x Flush Endcap | 630 | HAG |
| (1) Power Supply               | 2903                           |     | HAG |
| (1) Door Position Switch, DPDT | 1335-1-DPDT                    | 630 | ACS |

**Electrified Items Furnished by Security Supplier:**

- |                                    |                       |  |  |
|------------------------------------|-----------------------|--|--|
| (1) Card Reader, narrow jamb-mount | By Security Supplier. |  |  |
|------------------------------------|-----------------------|--|--|

Note: Locate inside door leaf.

**Furnished by Electrical Contractor:**

- |   |  |  |  |
|---|--|--|--|
| (1) Lot: Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide 4x4 flush box for exit alarm; locate on wall on push side of opening within 2' of strike jamb, 44" AFF. Provide conduit with pull strings from power supply to (2) power transfers in hinge side jamb and to the door contact on the top jamb. Provide doorbell system with chimes in ceiling in middle of Kitchen F103 and Office F103A. |  |  |  |
|---|--|--|--|

**System Function:**

Free egress; ingress by card. Opening is monitored for door position and request to exit signal from panic device.

**Hardware Set D01****Non-electrified Items Furnished by Contract Hardware Supplier:**

- |                              |                     |     |     |
|------------------------------|---------------------|-----|-----|
| (3) Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) Classroom Security Lock  | 3871-SECT-ARC       | 626 | HAG |
| (2) Mortise Cylinder Housing |                     | 626 | BES |
| (2) Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) Closer, Regular Arm      | 5100 MLT 1-6 ALM FC | 689 | HAG |

Note: Discard parallel arm bracket.

- |                       |                         |     |     |
|-----------------------|-------------------------|-----|-----|
| (1) Kick Plate        | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) Kick Plate        | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) Wall Stop, Convex | 230W (non-latex insert) | 626 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

- |                                |             |     |     |
|--------------------------------|-------------|-----|-----|
| (1) Door Position Switch, DPDT | 1335-1-DPDT | 630 | ACS |
|--------------------------------|-------------|-----|-----|

**Furnished by Electrical Contractor:**

- |  |  |  |  |
|--|--|--|--|
| (1) Lot: Provide conduit stub-up with pull string from door contact to concealed accessible space above opening. |  |  |  |
|--|--|--|--|

**System Function:**

Free egress. Free ingress or by key if door is locked. Opening is monitored for door position.

**Hardware Set D01A****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC           | 626 | HAG |
| (2) | Mortise Cylinder Housing |                         | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |             |     |     |
|-----|----------------------------|-------------|-----|-----|
| (1) | Door Position Switch, DPDT | 1335-1-DPDT | 630 | ACS |
|-----|----------------------------|-------------|-----|-----|

**Furnished by Electrical Contractor:**

- (1) Lot: Provide conduit stub-up with pull string from door contact to concealed accessible space above opening.

**System Function:**

Free egress. Free ingress or by key if door is locked. Opening is monitored for door position.

**Hardware Set D01B****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                          |   |     |     |
|-----|--------------------------|---|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5                          | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC                             | 626 | HAG |
| (2) | Mortise Cylinder Housing |   | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax                        | 626 | BES |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689 | HAG |

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                            |             |     |     |
|-----|----------------------------|-------------|-----|-----|
| (1) | Door Position Switch, DPDT | 1335-1-DPDT | 630 | ACS |
|-----|----------------------------|-------------|-----|-----|

**Furnished by Electrical Contractor:**

- (1) Lot: Provide conduit stub-up with pull string from door contact to concealed accessible space above opening.

**System Function:**

Free egress. Free ingress or by key if door is locked. Opening is monitored for door position.



**Hardware Set EF01**

**Non-electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge 628
- (2) Flush Pull 628
- (2) Adjustable Door Bottom Seal 628
- (1) Meeting Edge Seal Set 628

**Non-electrified Items Furnished by Contract Hardware Supplier:**

- (1) Key Removable Mullion 4900T x 4953 601 HAG  
Note: Field paint mullion to match frame color.
- (1) Panic Device, Rim, 01 4501-RIM-CD x Flush Endcap 630 HAG
- (1) Rim Cylinder Housing (for key removable mullion) 626 BES
- (1) Mortise Cylinder Housing 626 BES  
Note: For dogging.
- (3) Key Cylinder Core SFIC, 7-pin Cormax 626 BES
- (1) Closer, w/Spring Stop 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 689 HAG
- (1) Cat H Adhesive Mullion Seal/Mute MS-SA/75 Black DHSI
- (1) ¼” Saddle Threshold 413S x RCE 628 HAG

**Non-electrified Items by Aluminum Frame Supplier:**

- (1) Jamb Seal Set

**Electrified Items Furnished by FRP Door Manufacturer:**

- (1) Continuous Hinge (1)EPT Prep (RHRB door) 628

**Electrified Items Furnished by Contract Hardware Supplier:**

- (1) Panic Device, Rim, 01 4501-RIM x ML x Flush Endcap (RHRB) 630 HAG
- (1) Power Supply 2904 HAG
- (1) Elect Automatic Door Operator Senior Swing (RHRB) 628 LCN

Note 1: Operator Supplier/Installer shall mount and wire the keyswitch below onto the top panel of the operator housing to control and indicate by LED the 110V service to the operator. Enable Push-n-Go feature.

- (2) Door Position Switch, DPDT 1335-1-DPDT 630 ACS

**Electrified Items Furnished by Video-intercom Supplier:**

- (1) Video-intercom system with (2) monitor stations at desk in Reception B103 and one monitor station in Attendance B104.

**Furnished by Electrical Contractor:**

- (1) Lot: Provide 120VAC, 60Hz, 5A service to automatic door operator on top jamb. Provide 120VAC, 60Hz, 1A service to power supply located in concealed accessible space above ceiling near opening. Provide conduit with pull strings from power supply to automatic door operator, to power transfer in RHRB side jamb, to the door contacts on the top jamb, to the power supplies listed in this hardware set and in Hardware Set C02 for Door B103-B, and to all (3) pushbutton stations listed in Hardware set C02. Provide rough-ins as required for video-intercom system between Door B100A1-B and the VIC monitor stations at Reception B103 and Attendance B104 and the power supply listed in this hardware set. Provide a 110V common On/Off light switch to control the 120VAC power to the automatic door operator; mount this switch on the top of the housing of the automatic door operator.

**System Function:**

System Function: Free egress at all times; pushing on door triggers Push-N-Go feature so that door automatically opens for ADA egress. Ingress by pushbuttons on right side of all (3) Pushbutton Stations listed in Hardware Set C02, which retract latch on RHRB panic device and signal operator to open the door; door closes and relocks after time delay.

**Hardware Set M01****Non-electrified Items Furnished by Contract Hardware Supplier:**

|   |                                    |                                      |       |      |
|---|------------------------------------|--------------------------------------|-------|------|
| (6)   | Butt Hinges                        | BB1168 4.5 x 4.5                     | 652   | HAG  |
| (1)   | FR Key Removable Mullion           | 4900T-F                              | 601   | HAG  |
| Note: Field paint mullion to match frame color. |                                    |                                      |       |      |
| (1)   | Fire Exit Device, Rim, 08          | 4501-RIM-F x 45CE-ARC x Flush Endcap | 630   | HAG  |
| (1)   | Fire Exit Device, Rim, 02          | 4501-RIM-F x 45DT-ARC x Flush Endcap | 630   | HAG  |
| (1)   | Rim Cylinder Housing (for mullion) |                                      | 626   | BES  |
| (1)   | Mortise Cylinder Housing           |                                      | 626   | BES  |
| (2)   | Key Cylinder Core                  | SFIC, 7-pin Cormax                   | 626   | BES  |
| (2)   | Closer, HD Parallel Arm            | 5100 MLT 1-6 ALM HD FC               | 689   | HAG  |
| (2)   | Kick Plate                         | 194S 12 x 2LDW x CS                  | 630   | HAG  |
| (2)   | Kick Plate                         | 194S 12 x LDW x CS                   | 630   | HAG  |
| (1)   | Cat H Adhesive Mullion Seal/Mute   | MS-SA/75                             | Black | DHSI |
| (1)   | Cat H Jamb Seal Set                | 769C                                 | 628   | REE  |

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                         |      |     |     |
|-----|-------------------------|------|-----|-----|
| (2) | Magnetic Holder         | 380F | 652 | HAG |
| (2) | Mag Holder Mounting Box | 381B |     | HAG |

Note: Magnetic holder is single-gang, multi-voltage. Utilize these mounting boxes for proper installation.

**Furnished by Electrical Contractor:**

- (1) Lot: Install magnetic holder utilizing flush boxes specified above. Provide 12/24VDC or 24/120VAC power and fire alarm control.

**System Function:**

Magnetic holders are normally enabled to hold doors open; holders release upon fire alarm so that doors close and latch. Free egress at all times. Lever trim on RHRB exit device can be left in locked or unlocked condition by key.

**Hardware Set MW01****Non-electrified Items Furnished by Contract Hardware Supplier:**

|     |                           |                                   |     |     |
|-----|---------------------------|-----------------------------------|-----|-----|
| (2) | Continuous Hinges         | 224HD x UL                        | 628 | IVE |
| (1) | Fire Exit Device, SVR, 08 | WS-9927DT-F x 990DT x 374T x 304L | 626 | VON |
| (1) | Fire Exit Device, SVR, 01 | WS-9927EO-F x 990EO x 304L        | 626 | VON |
| (1) | Mortise Cylinder Housing  |                                   | 626 | BES |
| (1) | Key Cylinder Core         | SFIC, 7-pin Cormax                | 626 | BES |
| (2) | Closer, HD Parallel Arm   | 4040XP EDA                        | 689 | LCN |
| (2) | Kick Plate/Latch Guard    | WS-LGO x 2" LDW                   | 630 | VON |
| (1) | Cat H Astragal Set        | 8195                              | 628 | ZER |
| (1) | Cat H Jamb Seal Set       | 8803AA                            | 628 | ZER |

Note 1: ¾" maximum door undercut.

Note 2: This hardware set includes products listed for use as part of a complete tested assembly using Allegion Steelcraft windstorm doors and frame. If using doors and frames by another manufacturer, then the hardware must be part of a complete tested assembly for use with those doors and frames.

Note 3: Contractor to grout in 304L bottom strikes for exit device latches.

Note 4: Install NL cam into 374T exit trim in field to enable nightlatch 03 exit device function.

**Electrified Items Furnished by Contract Hardware Supplier:**

|     |                      |         |     |     |
|-----|----------------------|---------|-----|-----|
| (2) | Magnetic Door Holder | SEM7800 | 689 | LCN |
|-----|----------------------|---------|-----|-----|

Electrical Note 1: Provide holders with 12/24VDC or 120VAC service and fire alarm control.

**System Function:**

Free egress; ingress by key. Free egress by pushing on either exit device touchbar. Magnetic holders are normally enabled to hold doors open; holders release upon fire alarm or power failure so that doors close and latch. Doors may also be manually pulled away from holders at which point they will automatically close and latch.

**Hardware Set W01**

Note 1: All hardware by Storm Shelter Coiling Door Supplier.

**Hardware Set 01**

|                              |                         |     |     |
|------------------------------|-------------------------|-----|-----|
| (3) Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) Mortise Cylinder Housing |                         | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01A**

|                              |                      |     |     |
|------------------------------|----------------------|-----|-----|
| (3) Butt Hinges              | BB1168 4.5 x 4.5     | 652 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing |                      | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) Kick Plate               | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 01B**

|                              |                      |     |     |
|------------------------------|----------------------|-----|-----|
| (3) Butt Hinges              | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing |                      | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) Armor Plate              | 194S 20 x 2LDW x CS  | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 01C**

|                                |                      |     |     |
|--------------------------------|----------------------|-----|-----|
| (3) Butt Hinges                | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) Storeroom Lock             | 3880-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing   |                      | 626 | BES |
| (1) Key Cylinder Core          | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

Note 1: Mount kick plate on pull side of door.

**Hardware Set 01D**

|                                |                      |     |     |
|--------------------------------|----------------------|-----|-----|
| (3) Butt Hinges                | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) Storeroom Lock             | 3880-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing   |                      | 626 | BES |
| (1) Key Cylinder Core          | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Kick Plate                 | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

**Hardware Set 01E**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01F**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC       | 626 | HAG |
| (1) | Mortise Cylinder Housing |                     | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) | Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 01G**

|     |                              |                       |       |     |
|-----|------------------------------|-----------------------|-------|-----|
| (3) | Butt Hinges                  | BB1279 4.5 x 4.5      | 652   | HAG |
| (1) | Storeroom Lock               | 3880-SECT-ARC         | 626   | HAG |
| (1) | Mortise Cylinder Housing     |                       | 626   | BES |
| (1) | Key Cylinder Core            | SFIC, 7-pin Cormax    | 626   | BES |
| (1) | Closer, w/Spring Stop        | 5100 1-6 ALM HD CS FC | 689   | HAG |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS   | 630   | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS   | 630   | HAG |
| (1) | Cat H Adhesive Jamb Seal Set | 797B                  | Black | REE |

Note: Apply to top jamb only.

|     |                     |      |     |     |
|-----|---------------------|------|-----|-----|
| (1) | Cat H Jamb Seal Set | 769C | 628 | REE |
|-----|---------------------|------|-----|-----|

Note: Apply to side jambs only.

**Hardware Set 01H**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01J**

|     |                            |                      |     |     |
|-----|----------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                | BB1168 4.5 x 4.5     | 652 | HAG |
| (1) | Storeroom Lock             | 3880-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing   |                      | 626 | BES |
| (1) | Key Cylinder Core          | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Kick Plate                 | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

**Hardware Set 01K**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01L**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC       | 626 | HAG |
| (1) | Mortise Cylinder Housing |                     | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Lock Guard, Mortise Lock | 5000T               | 626 | TRI |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) | Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 01M**

|     |                              |                     |       |     |
|-----|------------------------------|---------------------|-------|-----|
| (3) | Butt Hinges                  | BB1279 4.5 x 4.5    | 652   | HAG |
| (1) | Storeroom Lock               | 3880-SECT-ARC       | 626   | HAG |
| (1) | Mortise Cylinder Housing     |                     | 626   | BES |
| (1) | Key Cylinder Core            | SFIC, 7-pin Cormax  | 626   | BES |
| (1) | Closer, w/Stop               | 5100 1-6 ALM HDS FC | 689   | HAG |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS | 630   | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS | 630   | HAG |
| (1) | Cat H Adhesive Jamb Seal Set | 797B                | Black | REE |

Note: Apply to top jamb only.

|     |                     |      |     |     |
|-----|---------------------|------|-----|-----|
| (1) | Cat H Jamb Seal Set | 769C | 628 | REE |
|-----|---------------------|------|-----|-----|

Note: Apply to side jambs only.

**Hardware Set 01N**

|     |                          |                      |     |     |
|-----|--------------------------|----------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing |                      | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 01P**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

Note 1: Mount kick plate on push side of door.

**Hardware Set 01Q**

|     |                              |                      |     |     |
|-----|------------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                  | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Storeroom Lock               | 3880-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing     |                      | 626 | BES |
| (1) | Key Cylinder Core            | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Concealed | 7016-CON (stop only) | 630 | HAG |

**Hardware Set 01R**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC       | 626 | HAG |
| (1) | Mortise Cylinder Housing |                     | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC  | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) | Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 01S**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Armor Plate              | 194S 20 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01T**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |
| (1) | Adjustable Jamb Seal Set | 107NA                   | 628 | NGP |
| (1) | Surface Sound Sweep      | SSDB3                   | 628 | DHS |

**Hardware Set 01U**

|                                     |                          |                     |     |     |
|-------------------------------------|--------------------------|---------------------|-----|-----|
| (3)                                 | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1)                                 | Storeroom Lock           | 3880-SECT-ARC       | 626 | HAG |
| (1)                                 | Mortise Cylinder Housing |                     | 626 | BES |
| (1)                                 | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1)                                 | Closer, Regular Arm      | 5100 MLT 1-6 ALM FC | 689 | HAG |
| Note: Discard parallel arm bracket. |                          |                     |     |     |
| (1)                                 | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1)                                 | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1)                                 | Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 01V**

|     |                                     |                         |     |     |
|-----|-------------------------------------|-------------------------|-----|-----|
| (1) | Continuous Hinge                    | 780-224HD               | 628 | HAG |
| (1) | Storeroom Lock                      | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing            |                         | 626 | BES |
| (1) | Key Cylinder Core                   | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, Regular Arm                 | 5100 MLT 1-6 ALM FC     | 689 | HAG |
|     | Note: Discard parallel arm bracket. |                         |     |     |
| (1) | Armor Plate                         | 194S 34 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate                          | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex                   | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 01W**

|     |                                     |                      |     |     |
|-----|-------------------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                         | BB1168 4.5 x 4.5     | 652 | HAG |
| (1) | Storeroom Lock                      | 3880-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing            |                      | 626 | BES |
| (1) | Key Cylinder Core                   | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Closer, Regular Arm                 | 5100 MLT 1-6 ALM FC  | 689 | HAG |
|     | Note: Discard parallel arm bracket. |                      |     |     |
| (1) | Closer Drop Plate                   | 5114                 | 689 | HAG |
| (1) | Kick Plate                          | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                          | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Concealed        | 7016-CON (stop only) | 630 | HAG |
| (1) | Adjustable Jamb Seal Set            | 107NA                | 628 | NGP |
| (1) | Surface Sound Sweep                 | SSDB3                | 628 | DHS |

Note 1: Use 5114 drop plate, rotated 180 degrees, to avoid spatial conflict with overhead stop.

**Hardware Set 01X**

|     |                                     |                         |     |     |
|-----|-------------------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges                         | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) | Storeroom Lock                      | 3880-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing            |                         | 626 | BES |
| (1) | Key Cylinder Core                   | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, Regular Arm                 | 5100 MLT 1-6 ALM FC     | 689 | HAG |
|     | Note: Discard parallel arm bracket. |                         |     |     |
| (1) | Kick Plate                          | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate                          | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex                   | 230W (non-latex insert) | 626 | HAG |
| (1) | Adjustable Jamb Seal Set            | 107NA                   | 628 | NGP |
| (1) | Surface Sound Sweep                 | SSDB3                   | 628 | DHS |

**Hardware Set 02**

|     |                         |                      |     |     |
|-----|-------------------------|----------------------|-----|-----|
| (3) | Butt Hinges             | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC        | 626 | HAG |
| (1) | Closer, w/Spring Stop   | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 02A**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges             | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 02B**

|                                     |                         |                         |     |     |
|-------------------------------------|-------------------------|-------------------------|-----|-----|
| (3)                                 | Butt Hinges             | BB1191 4.5 x 4.5        | 630 | HAG |
| (1)                                 | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1)                                 | Closer, Regular Arm     | 5100 MLT 1-6 ALM FC     | 689 | HAG |
| Note: Discard parallel arm bracket. |                         |                         |     |     |
| (1)                                 | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1)                                 | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1)                                 | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 02C**

|     |                            |                      |     |     |
|-----|----------------------------|----------------------|-----|-----|
| (1) | Butt Hinges                | BB1279 4.5 x 4.5     | 652 | HAG |
| (2) | Spring Hinges              | 1250 4.5 x 4.5       | 652 | HAG |
| (1) | Privacy Set w/Indicator    | 3896-SECT-ARC        | 626 | HAG |
| (1) | Kick Plate                 | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

Note 1: Adjust spring hinges to pull door almost closed, but not to latch.

**Hardware Set 02D**

|     |                              |                      |     |     |
|-----|------------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                  | BB1199 4.5 x 4.5     | 630 | HAG |
| (1) | Privacy Set w/Indicator      | 3896-SECT-ARC        | 626 | HAG |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Concealed | 7016-CON (stop only) | 630 | HAG |

**Hardware Set 02E**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges             | BB1199 4.5 x 4.5        | 630 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 02F**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges             | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1) | Closer, HD Parallel Arm | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 02G**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (1) | Butt Hinges             | BB1279 4.5 x 4.5        | 652 | HAG |
| (2) | Spring Hinges           | 1250 4.5 x 4.5          | 652 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

Note 1: Adjust spring hinges to pull door almost closed, but not to latch.



**Hardware Set 02H**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges             | BB1191 4.5 x 4.5        | 630 | HAG |
| (1) | Privacy Set w/Indicator | 3896-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 03**

|     |                           |                                       |     |     |
|-----|---------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges               | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Rim, 03, LD | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630 | HAG |
| (1) | Rim Cylinder Housing      |                                       | 626 | BES |
| (1) | Key Cylinder Core         | SFIC, 7-pin Cormax                    | 626 | BES |
| (1) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689 | HAG |
| (1) | Kick Plate                | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                | 194S 12 x 1LDW x CS                   | 630 | HAG |
| (1) | Wall Stop/Holder          | 327W                                  | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 03A**

|     |                           |                                       |     |     |
|-----|---------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges               | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Rim, 03, LD | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630 | HAG |
| (1) | Rim Cylinder Housing      |                                       | 626 | BES |
| (1) | Key Cylinder Core         | SFIC, 7-pin Cormax                    | 626 | BES |
| (1) | Closer, w/Spring Stop     | 5100 1-6 ALM HD CS FC                 | 689 | HAG |
| (1) | Kick Plate                | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                | 194S 12 x 1LDW x CS                   | 630 | HAG |

**Hardware Set 03B**

|     |                           |                                       |     |     |
|-----|---------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges               | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Rim, 01, LD | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630 | HAG |
| (1) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689 | HAG |
| (1) | Kick Plate                | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                | 194S 12 x 1LDW x CS                   | 630 | HAG |
| (1) | Wall Stop/Holder          | 327W                                  | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 03C**

|     |                           |                                       |     |     |
|-----|---------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges               | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Rim, 01, LD | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630 | HAG |
| (1) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689 | HAG |
| (1) | Kick Plate                | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                | 194S 12 x 1LDW x CS                   | 630 | HAG |
| (1) | Wall Stop, Convex         | 230W (non-latex insert)               | 626 | HAG |

**Hardware Set 03D**

|     |                           |                                       |     |     |
|-----|---------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges               | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Rim, 14, LD | 4501-RIM-LD x Flush Endcap x 45BE-ARC | 630 | HAG |
| (1) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689 | HAG |
| (1) | Kick Plate                | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                | 194S 12 x 1LDW x CS                   | 630 | HAG |
| (1) | Wall Stop/Holder          | 327W                                  | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

**Hardware Set 04**

|                              |                         |     |     |
|------------------------------|-------------------------|-----|-----|
| (3) Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) Office Lock              | 3850-SECT-ARC           | 626 | HAG |
| (1) Mortise Cylinder Housing |                         | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

Note 1: Door B112-B is Left Hand.

**Hardware Set 04A**

|                                  |                      |     |     |
|----------------------------------|----------------------|-----|-----|
| (3) Butt Hinges                  | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) Office Lock                  | 3850-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing     |                      | 626 | BES |
| (1) Key Cylinder Core            | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Kick Plate                   | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) Kick Plate                   | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) Overhead Stop, HD, Concealed | 7016-CON (stop only) | 630 | HAG |

**Hardware Set 04B**

|                                |                      |     |     |
|--------------------------------|----------------------|-----|-----|
| (3) Butt Hinges                | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) Office Lock                | 3850-SECT-ARC        | 626 | HAG |
| (1) Mortise Cylinder Housing   |                      | 626 | BES |
| (1) Key Cylinder Core          | SFIC, 7-pin Cormax   | 626 | BES |
| (1) Kick Plate                 | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

**Hardware Set 05**

|                            |                            |     |     |
|----------------------------|----------------------------|-----|-----|
| (1) Barn Door System       | Krownlab, Oden, Face-mount | 630 | KLB |
| (1) Barn Door Lock         | 7200ADA.9100BDL-3.6        | 626 | ACC |
| (1) Dummy Mortise Cylinder |                            | 626 | BES |
| (1) Straight Pull, 12"     | RM5702                     | 626 | ROC |

Note 1: Door is not a required exit in either direction. Detail lock so that thumbturn is on the side opposite the Workroom side centered at 48" AFF and so the dummy cylinder is on the Workroom side. Mount pull on same centerline as barn door lock thumbturn and on the same side as the thumbturn, so that the top pull screw is ½" below the mortise lock pocket cutout. No pull on the Workroom side.

**Hardware Set 06**

|                                |                      |     |     |
|--------------------------------|----------------------|-----|-----|
| (6) Butt Hinges                | BB1168 4.5 x 4.5     | 652 | HAG |
| (2) Push Bar                   | 140S                 | 630 | HAG |
| (2) Straight Pull, 1"D, 12"CTC | 4L                   | 630 | HAG |
| (2) Closer, w/Spring Stop      | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (2) Kick Plate                 | 194S 8 x 2LDW x CS   | 630 | HAG |
| (2) Kick Plate                 | 194S 8 x 1LDW x CS   | 630 | HAG |
| (1) Cat H Astragal Set         | 788C (2 pieces)      | 628 | REE |

**Hardware Set 06A**

|     |   |                    |     |     |
|-----|---|--------------------|-----|-----|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5   | 652 | HAG |
| (2) | Push Bar  | 140S               | 630 | HAG |
| (2) | Straight Pull, 1"D, 12"CTC  | 4L                 | 630 | HAG |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC | 689 | HAG |
| (2) | Kick Plate  | 194S 8 x 2LDW x CS | 630 | HAG |
| (2) | Kick Plate  | 194S 8 x 1LDW x CS | 630 | HAG |
| (2) | Wall Stop/Holder  | 327W               | 626 | HAG |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                    |     |     |
| (1) | Cat H Astragal Set  | 788C (2 pieces)    | 628 | REE |

**Hardware Set 06B**

|     |                            |   |     |     |
|-----|----------------------------|---|-----|-----|
| (2) | Continuous Hinge           | 780-112HD                                 | 628 | HAG |
| (2) | Push Bar                   | 140S                                      | 630 | HAG |
| (2) | Straight Pull, 1"D, 12"CTC | 4L  | 630 | HAG |
| (2) | Closer, w/Spring Stop      | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689 | HAG |

Note 1: Jamb and meeting edge seals by aluminum door supplier.

**Hardware Set 07**

|     |                   |                         |     |     |
|-----|-------------------|-------------------------|-----|-----|
| (3) | Butt Hinges       | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Passage Set       | 3810-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate        | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate        | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 07A**

|     |                         |                         |     |     |
|-----|-------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges             | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Passage Set             | 3810-SECT-ARC           | 626 | HAG |
| (1) | Closer, HD Parallel Arm | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate              | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate              | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex       | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 07B**

|     |                   |                         |     |     |
|-----|-------------------|-------------------------|-----|-----|
| (3) | Butt Hinges       | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) | Passage Set       | 3810-SECT-ARC           | 626 | HAG |
| (1) | Kick Plate        | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate        | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 07C**

|     |                   |                         |     |     |
|-----|-------------------|-------------------------|-----|-----|
| (3) | Butt Hinges       | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Passage Set       | 3810-SECT-ARC           | 626 | HAG |
| (1) | Wall Stop, Convex | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 07D**

|     |                          |                      |     |     |
|-----|--------------------------|----------------------|-----|-----|
| (3) | Butt Hinges              | BB1168 4.5 x 4.5     | 652 | HAG |
| (1) | Passage Set              | 3810-SECT-ARC        | 626 | HAG |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Adjustable Jamb Seal Set | 107NA                | 628 | NGP |
| (1) | Surface Sound Sweep      | SSDB3                | 628 | DHS |
| (1) | Closer Mounting Bracket  | 7ASL                 | 689 | NGP |

Note 1: Do not cut jamb seals for closer arm bracket. Mount closer arm brackets to 7ASL closer mounting bracket; lower the closer accordingly.

**Hardware Set 07E**

|     |                       |                      |     |     |
|-----|-----------------------|----------------------|-----|-----|
| (3) | Butt Hinges           | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Passage Set           | 3810-SECT-ARC        | 626 | HAG |
| (1) | Closer, w/Spring Stop | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate            | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate            | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 08**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC           | 626 | HAG |
| (2) | Mortise Cylinder Housing |                         | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 08A**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC       | 626 | HAG |
| (2) | Mortise Cylinder Housing |                     | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) | Adjustable Jamb Seal Set | 107NA               | 628 | NGP |
| (1) | Surface Sound Sweep      | SSDB3               | 628 | DHS |

Note 1: Door C120-B is Right Hand.

**Hardware Set 08B**

|     |                          |                      |     |     |
|-----|--------------------------|----------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC        | 626 | HAG |
| (2) | Mortise Cylinder Housing |                      | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS  | 630 | HAG |

**Hardware Set 08C**

|     |                          |   |     |     |
|-----|--------------------------|---|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5                          | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC                             | 626 | HAG |
| (2) | Mortise Cylinder Housing |   | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax                        | 626 | BES |
| (1) | Closer, w/Spring Stop    | 5100 1-6 ALM HDCS FC x 5110 x 5111 x 5113 | 689 | HAG |

Note 1: Door G100B1-C is Right Hand Reverse Bevel.

**Hardware Set 08D**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC           | 626 | HAG |
| (2) | Mortise Cylinder Housing |                         | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Closer, HD Parallel Arm  | 5100 1-6 ALM HD FC      | 689 | HAG |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 08E**

|     |                          |                     |     |     |
|-----|--------------------------|---------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5    | 652 | HAG |
| (1) | Classroom Security Lock  | 3871-SECT-ARC       | 626 | HAG |
| (2) | Mortise Cylinder Housing |                     | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) | Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

Note 1: Doors G105-B, G105 A are Left Hand. Door G105B is Right Hand Reverse Bevel. Doors G105C, G108-B, G108A are Right Hand. Door G108B is Left Hand Reverse Bevel. Door G108C is Left Hand.

**Hardware Set 08F**

|     |                              |                      |     |     |
|-----|------------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                  | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Classroom Security Lock      | 3871-SECT-ARC        | 626 | HAG |
| (2) | Mortise Cylinder Housing     |                      | 626 | BES |
| (2) | Key Cylinder Core            | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Concealed | 7016-CON (stop only) | 630 | HAG |

**Hardware Set 09**

|   |   |   |       |      |
|---|---|---|-------|------|
| (2)   | Continuous Hinge                          | 780-112HD                                   | 628   | HAG  |
| (1)   | Key Removable Mullion                     | 4900T                                       | 601   | HAG  |
| Note: Field paint mullion to match frame color. |   |   |       |      |
| (2)   | Panic Device, Rim, 01                     | 4501-RIM-LD x Flush Endcap x 45PD           | 630   | HAG  |
| (1)   | Rim Cylinder Housing                      |   | 626   | BES  |
| (1)   | Key Cylinder Core                         | SFIC, 7-pin Cormax                          | 626   | BES  |
| (2)   | Closer, w/Spring Stop/HO                  | 5100 1-6 ALM HDHOCS FC x 5110 x 5111 x 5113 | 689   | HAG  |
| (1)   | Cat H Adhesive Mullion Seal/Mute MS-SA/75 |   | Black | DHSI |

**Hardware Set 09A**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion   | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.                   |                                       |       |      |
| (1) | Panic Device, Rim, 03   | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                                    |                                       |       |      |
| (1) | Panic Device, Rim, 01   | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing  |                                       | 626   | BES  |
| (2) | Key Cylinder Core   | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689   | HAG  |
| (2) | Kick Plate  | 194S 12 x 2LDW x CS                   | 630   | HAG  |
| (2) | Kick Plate  | 194S 12 x 1LDW x CS                   | 630   | HAG  |
| (2) | Wall Stop/Holder  | 327W                                  | 626   | HAG  |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                                       |       |      |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75                         |                                       | Black | DHSI |

**Hardware Set 09B**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion   | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.                   |                                       |       |      |
| (1) | Panic Device, Rim, 08   | 4501-RIM-LD x Flush Endcap x 45CE-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                                    |                                       |       |      |
| (1) | Panic Device, Rim, 01   | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (1) | Rim Cylinder Housing  |                                       | 626   | BES  |
| (1) | Mortise Cylinder Housing  |                                       | 626   | BES  |
| (2) | Key Cylinder Core   | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689   | HAG  |
| (2) | Kick Plate  | 194S 12 x 2LDW x CS                   | 630   | HAG  |
| (2) | Kick Plate  | 194S 12 x 1LDW x CS                   | 630   | HAG  |
| (2) | Wall Stop/Holder  | 327W                                  | 626   | HAG  |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                                       |       |      |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75                         |                                       | Black | DHSI |

**Hardware Set 09C**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges                                     | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion                           | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color. |                                       |       |      |
| (1) | Panic Device, Rim, 03                           | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                  |                                       |       |      |
| (1) | Panic Device, Rim, 01                           | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing                            |                                       | 626   | BES  |
| (2) | Key Cylinder Core                               | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, w/Spring Stop/HO                        | 5100 1-6 ALM HDHOCS FC                | 689   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 2LDW x CS                    | 630   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 1LDW x CS                    | 630   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75       |                                       | Black | DHSI |

**Hardware Set 09D**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges                                     | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion                           | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color. |                                       |       |      |
| (1) | Panic Device, Rim, 03                           | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                  |                                       |       |      |
| (1) | Panic Device, Rim, 01                           | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing                            |                                       | 626   | BES  |
| (2) | Key Cylinder Core                               | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, w/Spring Stop                           | 5100 1-6 ALM HDCS FC                  | 689   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 2LDW x CS                    | 630   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 1LDW x CS                    | 630   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute                | MS-SA/75                              | Black | DHSI |

**Hardware Set 09E**

|     |   |                                      |       |      |
|-----|---|--------------------------------------|-------|------|
| (6) | Butt Hinges                                     | BB1168 4.5 x 4.5                     | 652   | HAG  |
| (1) | FR Key Removable Mullion                        | 4900T-F                              | 601   | HAG  |
|     | Note: Field paint mullion to match frame color. |                                      |       |      |
| (1) | Fire Exit Device, Rim, 03                       | 4501-RIM-F x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                  |                                      |       |      |
| (1) | Fire Exit Device, Rim, 01                       | 4501-RIM-F x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing                            |                                      | 626   | BES  |
| (2) | Key Cylinder Core                               | SFIC, 7-pin Cormax                   | 626   | BES  |
| (2) | Closer, w/Spring Stop                           | 5100 1-6 ALM HDCS FC                 | 689   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 2LDW x CS                   | 630   | HAG  |
| (2) | Kick Plate                                      | 194S 8 x 1LDW x CS                   | 630   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute                | MS-SA/75                             | Black | DHSI |
| (1) | Cat H Adhesive Jamb Seal Set                    | 797B                                 | Black | REE  |
|     | Note: Apply to top jamb only.                   |                                      |       |      |
| (1) | Cat H Jamb Seal Set                             | 769C                                 | 628   | REE  |
|     | Note: Apply to side jambs only.                 |                                      |       |      |

**Hardware Set 09F**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion   | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.                   |                                       |       |      |
| (1) | Panic Device, Rim, 03   | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                                    |                                       |       |      |
| (1) | Panic Device, Rim, 01   | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing  |                                       | 626   | BES  |
| (2) | Key Cylinder Core   | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                    | 689   | HAG  |
| (2) | Kick Plate  | 194S 12 x 2LDW x CS                   | 630   | HAG  |
| (2) | Kick Plate  | 194S 12 x 1LDW x CS                   | 630   | HAG  |
| (2) | Wall Stop/Holder  | 327W                                  | 626   | HAG  |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                                       |       |      |
| (1) | Cat H Adhesive Mullion Seal/Mute                                  | MS-SA/75                              | Black | DHSI |
| (1) | Cat H Adhesive Jamb Seal Set                                      | 797B                                  | Black | REE  |
|     | Note: Apply to top jamb only.                                     |                                       |       |      |
| (1) | Adjustable Jamb Seal Set  | 107NA                                 | 628   | NGP  |
|     | Note: Apply to side jambs only.                                   |                                       |       |      |
| (2) | Surface Sound Sweep   | SSDB3                                 | 628   | DHS  |

**Hardware Set 09G**

|     |   |                                       |       |      |
|-----|---|---------------------------------------|-------|------|
| (6) | Butt Hinges                                     | BB1168 4.5 x 4.5                      | 652   | HAG  |
| (1) | Key Removable Mullion                           | 4900T                                 | 601   | HAG  |
|     | Note: Field paint mullion to match frame color. |                                       |       |      |
| (1) | Panic Device, Rim, 03                           | 4501-RIM-LD x Flush Endcap x 45NL-ARC | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                  |                                       |       |      |
| (1) | Panic Device, Rim, 01                           | 4501-RIM-LD x Flush Endcap x 45DT-ARC | 630   | HAG  |
| (2) | Rim Cylinder Housing                            |                                       | 626   | BES  |
| (2) | Key Cylinder Core                               | SFIC, 7-pin Cormax                    | 626   | BES  |
| (2) | Closer, HD Parallel Arm                         | 5100 1-6 ALM HD FC                    | 689   | HAG  |
| (2) | Kick Plate                                      | 194S 12 x 2LDW x CS                   | 630   | HAG  |
| (2) | Kick Plate                                      | 194S 12 x 1LDW x CS                   | 630   | HAG  |
| (2) | Wall Stop, Convex                               | 230W (non-latex insert)               | 626   | HAG  |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75       |                                       | Black | DHSI |

**Hardware Set 09H**

|     |   |                                   |       |      |
|-----|---|-----------------------------------|-------|------|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                  | 652   | HAG  |
| (1) | Key Removable Mullion   | 4900T                             | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.                   |                                   |       |      |
| (1) | Panic Device, Rim, 03   | 4501-RIM-LD x Flush Endcap x 45PN | 630   | HAG  |
|     | Note: Mount on RHRB door leaf.                                    |                                   |       |      |
| (1) | Panic Device, Rim, 01   | 4501-RIM-LD x Flush Endcap x 45PD | 630   | HAG  |
| (2) | Rim Cylinder Housing  |                                   | 626   | BES  |
| (2) | Key Cylinder Core   | SFIC, 7-pin Cormax                | 626   | BES  |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                | 689   | HAG  |
| (2) | Kick Plate  | 194S 12 x 2LDW x CS               | 630   | HAG  |
| (2) | Kick Plate  | 194S 12 x 1LDW x CS               | 630   | HAG  |
| (2) | Wall Stop/Holder  | 327W                              | 626   | HAG  |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                                   |       |      |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75                         |                                   | Black | DHSI |

**Hardware Set 09J**

|     |   |                                   |       |      |
|-----|---|-----------------------------------|-------|------|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                  | 652   | HAG  |
| (1) | Key Removable Mullion   | 4900T                             | 601   | HAG  |
|     | Note: Field paint mullion to match frame color.                   |                                   |       |      |
| (2) | Panic Device, Rim, 01   | 4501-RIM-LD x Flush Endcap x 45EO | 630   | HAG  |
| (1) | Rim Cylinder Housing  |                                   | 626   | BES  |
| (1) | Key Cylinder Core   | SFIC, 7-pin Cormax                | 626   | BES  |
| (2) | Closer, HD Parallel Arm   | 5100 1-6 ALM HD FC                | 689   | HAG  |
| (2) | Kick Plate  | 194S 12 x 2LDW x CS               | 630   | HAG  |
| (2) | Kick Plate  | 194S 12 x 1LDW x CS               | 630   | HAG  |
| (2) | Wall Stop/Holder  | 327W                              | 626   | HAG  |
|     | Note: Locate approx. 4" down and in from top lock corner of door. |                                   |       |      |
| (1) | Cat H Adhesive Mullion Seal/Mute MS-SA/75                         |                                   | Black | DHSI |



**Hardware Set 10**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Classroom Lock           | 3870-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |
| (1) | Adjustable Jamb Seal Set | 107NA                   | 628 | NGP |
| (1) | Surface Sound Sweep      | SSDB3                   | 628 | DHS |

**Hardware Set 10A**

|     |                          |                         |     |     |
|-----|--------------------------|-------------------------|-----|-----|
| (3) | Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) | Classroom Lock           | 3870-SECT-ARC           | 626 | HAG |
| (1) | Mortise Cylinder Housing |                         | 626 | BES |
| (1) | Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) | Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) | Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (1) | Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 10B**

|     |                              |                      |     |     |
|-----|------------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                  | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Classroom Lock               | 3870-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing     |                      | 626 | BES |
| (1) | Key Cylinder Core            | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Kick Plate                   | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                   | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Concealed | 7016-CON (stop only) | 630 | HAG |
| (1) | Adjustable Jamb Seal Set     | 107NA                | 628 | NGP |
| (1) | Surface Sound Sweep          | SSDB3                | 628 | DHS |

**Hardware Set 10C**

|     |                            |                      |     |     |
|-----|----------------------------|----------------------|-----|-----|
| (3) | Butt Hinges                | BB1168 4.5 x 4.5     | 652 | HAG |
| (1) | Classroom Lock             | 3870-SECT-ARC        | 626 | HAG |
| (1) | Mortise Cylinder Housing   |                      | 626 | BES |
| (1) | Key Cylinder Core          | SFIC, 7-pin Cormax   | 626 | BES |
| (1) | Kick Plate                 | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate                 | 194S 12 x 1LDW x CS  | 630 | HAG |
| (1) | Overhead Stop, HD, Surface | 7016-SRF (stop only) | 630 | HAG |

**Hardware Set 11**

Note 1: Cased opening. No hardware required.

**Hardware Set 11A**

Note 1: All hardware, including non-keyed locking devices, by overhead door supplier.

**Hardware Set 11B**

|     |                          |                    |     |     |
|-----|--------------------------|--------------------|-----|-----|
| (2) | Mortise Cylinder Housing |                    | 626 | BES |
| (2) | Key Cylinder Core        | SFIC, 7-pin Cormax | 626 | BES |

Note 1: Balance of hardware, including locking devices compatible with standard key cylinder on building masterkey system, by overhead door supplier. Contractor to coordinate cylinder type and cam required.

**Hardware Set 11C**

Note 1: All hardware, including non-keyed locking devices, by folding glass door supplier.

**Hardware Set 11D**

- |                                 |   |              |     |
|---------------------------------|---|--------------|-----|
| (1) Permanent Key Cylinder Core | 7-pin, Cormax                           | 626          | BES |
| (1) Wire Partition Lockset      | SF-1 x SB-4 x "Best Cylinder Less Core" | Wirecrafters |     |

Note 1: The Wire Partition Lockset and "Best Cylinder Less Core" are to be provided by wire partition supplier. The Permanent Key Cylinder Core is furnished by the Contract Hardware Supplier and installed by Contractor. Contractor to coordinate. Balance of hardware by door partition supplier.

**Hardware Set 11E**

- |                       |          |       |     |
|-----------------------|----------|-------|-----|
| (1) Gate Exit Bar Kit | 6045-B36 | Black | DAC |
|-----------------------|----------|-------|-----|

Note: Order kit less lock box and less key cylinder and keys.

- |                              |        |       |     |
|------------------------------|--------|-------|-----|
| (1) Gate Latch Protector Kit | 6015-B | Black | DAC |
|------------------------------|--------|-------|-----|

Note: Basis of design manufacturer is DAC Industries, Inc., [www.dacindustries.com](http://www.dacindustries.com), 800-888-9768. Equals by Detex.

**Hardware Set 12**

- |                              |                         |     |     |
|------------------------------|-------------------------|-----|-----|
| (6) Butt Hinges              | BB1168 4.5 x 4.5        | 652 | HAG |
| (1) Manual Flush Bolt        | 282R-25 (top)           | 626 | HAG |
| (1) Manual Flush Bolt        | 282D                    | 626 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) Mortise Cylinder Housing |                         | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (2) Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 12A**

- |                              |                         |     |     |
|------------------------------|-------------------------|-----|-----|
| (6) Butt Hinges              | BB1279 4.5 x 4.5        | 652 | HAG |
| (1) Manual Flush Bolt        | 282R-25 (top)           | 626 | HAG |
| (1) Manual Flush Bolt        | 282D                    | 626 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC           | 626 | HAG |
| (1) Mortise Cylinder Housing |                         | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax      | 626 | BES |
| (1) Kick Plate               | 194S 12 x 2LDW x CS     | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS     | 630 | HAG |
| (2) Wall Stop, Convex        | 230W (non-latex insert) | 626 | HAG |

**Hardware Set 12B**

- |                              |                     |     |     |
|------------------------------|---------------------|-----|-----|
| (6) Butt Hinges              | BB1168 4.5 x 4.5    | 652 | HAG |
| (1) Manual Flush Bolt        | 282R-25 (top)       | 626 | HAG |
| (1) Manual Flush Bolt        | 282D                | 626 | HAG |
| (1) Storeroom Lock           | 3880-SECT-ARC       | 626 | HAG |
| (1) Mortise Cylinder Housing |                     | 626 | BES |
| (1) Key Cylinder Core        | SFIC, 7-pin Cormax  | 626 | BES |
| (1) Kick Plate               | 194S 12 x 2LDW x CS | 630 | HAG |
| (1) Kick Plate               | 194S 12 x 1LDW x CS | 630 | HAG |
| (1) Wall Stop/Holder         | 327W                | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

- |                                  |                      |     |     |
|----------------------------------|----------------------|-----|-----|
| (1) Overhead Holder, HD, Surface | 7017-SRF (hold open) | 630 | HAG |
|----------------------------------|----------------------|-----|-----|

**Hardware Set 12C**

|     |   |                                   |     |     |
|-----|---|-----------------------------------|-----|-----|
| (6) | Butt Hinges   | BB1168 4.5 x 4.5                  | 652 | HAG |
| (1) | Manual Flush Bolt   | 282R-25 (top)                     | 626 | HAG |
| (1) | Manual Flush Bolt   | 282D                              | 626 | HAG |
| (1) | Storeroom Lock  | 3880-SECT-ARC x Less Outside Trim | 626 | HAG |
| (1) | Mortise Cylinder Housing  |                                   | 626 | BES |
| (1) | Key Cylinder Core   | SFIC, 7-pin Cormax                | 626 | BES |
| (1) | Flush Ring Pull   | 1068                              | 626 | TRI |
|     | Note: Supplier to detail flush ring pull for spindle thickness and orientation. |                                   |     |     |
| (1) | Kick Plate  | 194S 12 x 2LDW x CS               | 630 | HAG |
| (1) | Kick Plate  | 194S 12 x 1LDW x CS               | 630 | HAG |
| (2) | Overhead Holder, HD, Surface  | 7017-SRF (hold open)              | 630 | HAG |

**Hardware Set 13**

|     |                               |                                       |     |     |
|-----|-------------------------------|---------------------------------------|-----|-----|
| (3) | Butt Hinges                   | BB1168 4.5 x 4.5                      | 652 | HAG |
| (1) | Panic Device, Mortise, 01, LD | 4501-MRT-LD x Flush Endcap x 45MD-ARC | 630 | HAG |
| (1) | Closer, HD Parallel Arm       | 5100 1-6 ALM HD FC                    | 689 | HAG |
| (1) | Kick Plate                    | 194S 12 x 2LDW x CS                   | 630 | HAG |
| (1) | Kick Plate                    | 194S 12 x 1LDW x CS                   | 630 | HAG |
| (1) | Wall Stop, Convex             | 230W (non-latex insert)               | 626 | HAG |
| (1) | Adjustable Jamb Seal Set      | 107NA                                 | 628 | NGP |
| (1) | Surface Sound Sweep           | SSDB3                                 | 628 | DHS |
| (1) | Closer Mounting Bracket       | 7ASL                                  | 689 | NGP |

Note 1: Do not cut jamb seals for closer arm brackets. Mount closer arm brackets to 7ASL closer mounting brackets; lower the closers accordingly.

**Hardware Set 13A**

|     |                               |  |     |     |
|-----|-------------------------------|--|-----|-----|
| (3) | Butt Hinges                   | BB1168 4.5 x 4.5                       | 652 | HAG |
| (1) | Panic Device, Mortise, 03, LD | 4501-MRTN-LD x Flush Endcap x 45MN-ARC | 630 | HAG |
| (1) | Mortise Cylinder Housing      |  | 626 | BES |
| (1) | Key Cylinder Core             | SFIC, 7-pin Cormax                     | 626 | BES |
| (1) | Closer, HD Parallel Arm       | 5100 1-6 ALM HD FC                     | 689 | HAG |
| (1) | Kick Plate                    | 194S 12 x 2LDW x CS                    | 630 | HAG |
| (1) | Kick Plate                    | 194S 12 x 1LDW x CS                    | 630 | HAG |
| (1) | Wall Stop/Holder              | 327W                                   | 626 | HAG |

Note: Locate approx. 4" down and in from top lock corner of door.

|     |                          |       |     |     |
|-----|--------------------------|-------|-----|-----|
| (1) | Adjustable Jamb Seal Set | 107NA | 628 | NGP |
| (1) | Surface Sound Sweep      | SSDB3 | 628 | DHS |
| (1) | Closer Mounting Bracket  | 7ASL  | 689 | NGP |

Note 1: Do not cut jamb seals for closer arm brackets. Mount closer arm brackets to 7ASL closer mounting brackets; lower the closers accordingly.

**Hardware Set 14**

|     |                       |                      |     |     |
|-----|-----------------------|----------------------|-----|-----|
| (3) | Butt Hinges           | BB1279 4.5 x 4.5     | 652 | HAG |
| (1) | Push Plate            | 90R                  | 630 | HAG |
| (1) | Pull Plate            | A40R x 1G            | 630 | HAG |
| (1) | Closer, w/Spring Stop | 5100 1-6 ALM HDCS FC | 689 | HAG |
| (1) | Kick Plate            | 194S 12 x 2LDW x CS  | 630 | HAG |
| (1) | Kick Plate            | 194S 12 x 1LDW x CS  | 630 | HAG |

**END OF SECTION 087100**

**SECTION 221123.21 - INLINE, DOMESTIC-WATER PUMPS****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. In-line, sealless centrifugal pumps.
  - 2. Horizontally mounted, in-line, close-coupled centrifugal pumps.
  - 3. Vertically mounted, in-line, close-coupled centrifugal pumps.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product. Include construction materials, rated capacities, certified performance curves with operating points plotted on curves, operating characteristics, electrical characteristics, and furnished specialties and accessories.

**1.4 INFORMATIONAL SUBMITTALS**

- A. Field quality-control reports.

**1.5 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For inline, domestic-water pumps to include in operation and maintenance manuals.

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Retain shipping flange protective covers and protective coatings during storage.
- B. Protect bearings and couplings against damage.
- C. Comply with pump manufacturer's written instructions for handling.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. UL Compliance: UL 778 for motor-operated water pumps.
- C. Drinking Water System Components - Health Effects and Drinking Water System Components - Lead Content Compliance: NSF 61 and NSF 372.

### 2.2 IN-LINE, SEALLESS CENTRIFUGAL PUMPS

- A. Description: Factory-assembled and -tested, in-line, close-coupled, canned-motor, sealless, overhung-impeller centrifugal pumps.
- B. 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:
  - 1. Grundfos Pumps Corp.
  - 2. TACO Comfort Solutions, Inc.
  - 3. Weil Pumps
  - 4. Armstrong
  - 5. Gould
- C. Pump Construction:
  - 1. Pump and Motor Assembly: Hermetically sealed, replaceable-cartridge type with motor and impeller on common shaft and designed for installation with pump and motor shaft horizontal.
  - 2. Minimum Working Pressure: 125 psig (860 kPa).
  - 3. Maximum Continuous Operating Temperature: 220 deg F (104 deg C).
  - 4. Casing: Cast iron, with threaded or companion-flange connections.
  - 5. Impeller: stainless steel.
  - 6. Motor: Single speed.

### 2.3 HORIZONTALLY MOUNTED, IN-LINE, CLOSE-COUPLED CENTRIFUGAL PUMPS

- A. Description: Factory-assembled and -tested, in-line, single-stage, close-coupled, overhung-impeller centrifugal pumps designed for installation with pump and motor shaft mounted horizontal.
- B. 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:
  - 1. Bell & Gossett; a Xylem brand.
  - 2. TACO Comfort Solutions, Inc.
  - 3. Weil Pumps
  - 4. Armstrong
  - 5. Gould

C. Pump Construction:

1. Casing:

- a. Radially split bronze, brass or cast iron with threaded companion-flange connections for pumps with NPS 2 (DN 50) pipe connections and flanged connections for pumps with NPS 2-1/2 (DN 65) pipe connections.
- b. Built to permit servicing of pump internals without disturbing the casing or the suction and discharge piping.
- c. Gauge port tappings at suction and discharge nozzles.

2. Impeller: Bronze or brass, statically and dynamically balanced, closed, and keyed to shaft.
3. Shaft and Shaft Sleeve: Steel shaft with deflector, with copper-alloy shaft sleeve. Include water slinger on shaft between motor and seal.
4. Shaft Coupling: Flexible, capable of absorbing torsional vibration and shaft misalignment.
5. Seal: Mechanical, with carbon-steel rotating ring, stainless-steel spring, ceramic seat, and rubber bellows and gasket.
6. Bearings: Grease-lubricated or permanently lubricated ball type.
7. Minimum Working Pressure: 175 psig (1200 kPa).
8. Continuous Operating Temperature: 225 deg F (107 deg C).

D. Motor: Single speed, with grease-lubricated ball bearings; resiliently or rigidly mounted to pump casing.

2.4 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 220513 "Common Motor Requirements for Plumbing Equipment."

1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

2.5 CONTROLS

1. Aquastat – wire to pump per manufacturer's requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for domestic-water-piping system to verify actual locations of piping connections before pump installation.

3.2 PUMP INSTALLATION

A. Mount pumps in orientation complying with manufacturer's written instructions.

B. Install continuous-thread hanger rods and vibration isolation of size required to support pump weight.

1. Comply with requirements for vibration isolation devices specified Fabricate brackets or supports as required.
2. Comply with requirements for hangers and supports specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."

C. Install timers on wall in mechanical room.

### 3.3 PIPING CONNECTIONS

A. Comply with requirements for piping specified in Section 221116 "Domestic Water Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

B. Where installing piping adjacent to inline, domestic-water pumps, allow space for service and maintenance.

C. Connect domestic-water piping to pumps. Install suction and discharge piping equal to or greater than size of pump nozzles.

1. Install flexible connectors adjacent to pumps in suction and discharge piping of the following pumps:
  - a. Horizontally mounted, in-line, close-coupled centrifugal pumps.
  - b. Comply with requirements for flexible connectors specified in Section 221116 "Domestic Water Piping."

D. Install shutoff valve and strainer on suction side of each pump, and check, shutoff, and throttling valves on discharge side of each pump. Install valves same size as connected piping. Comply with requirements for strainers specified in Section 221119 "Domestic Water Piping Specialties."

E. Install pressure gauge and snubber at suction of each pump and pressure gauge and snubber at discharge of each pump. Install at integral pressure-gauge tapings where provided or install pressure-gauge connectors in suction and discharge piping around pumps. Comply with requirements for pressure gauges and snubbers specified in Section 220519 "Meters and Gages for Plumbing Piping."

### 3.4 CONTROL CONNECTIONS

A. Install control and electrical power wiring to field-mounted control devices.

B. Connect control wiring between temperature controllers and devices.

### 3.5 IDENTIFICATION

A. Identify system components. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment" for identification of pumps.

### 3.6 FIELD QUALITY CONTROL

A. Perform tests and inspections with the assistance of a factory-authorized service representative.

B. Tests and Inspections:

1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Inline, domestic-water pump will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

### 3.7 STARTUP SERVICE

- A. Perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.
  2. Check piping connections for tightness.
  3. Clean strainers on suction piping.
  4. Set controls for automatic starting and stopping operation of pumps.
  5. Perform the following startup checks for each pump before starting:
    - a. Verify bearing lubrication.
    - b. Verify that pump is free to rotate by hand and that pump for handling hot liquid is free to rotate with pump hot and cold. If pump is bound or drags, do not operate until cause of trouble is determined and corrected.
    - c. Verify that pump is rotating in the correct direction.
  6. Prime pump by opening suction valves and closing drains, and prepare pump for operation.
  7. Start motor.
  8. Open discharge valve slowly.
  9. Adjust temperature settings on thermostats.
  10. Adjust timer settings.

### 3.8 ADJUSTING

- A. Adjust inline, domestic-water pumps to function smoothly, and lubricate as recommended by manufacturer.
- B. Adjust initial temperature set points.
- C. Set field-adjustable switches and circuit-breaker trip ranges as indicated.

**END OF SECTION 221123.21**



Table with columns: LF-#, FIXTURE DESCRIPTION, VOLTAGE, WATTAGE, LAMP, LUMEN OUTPUT, COLOR TEMPERATURE, COLOR RENDERING INDEX (CRI), DRIVER, MANUFACTURER, MODEL, EQUIVALENT MANUFACTURERS. Contains detailed lighting fixture specifications for various rooms.

NOTE: LIGHT FIXTURE SHOP DRAWINGS ARE TO INCLUDE INFORMATION REGARDING THE LED DRIVERS/POWER SUPPLIES, INCLUDING MANUFACTURER, MODEL NUMBER, CUT SHEET, MOUNTING REQUIREMENTS, ETC. THIS INFORMATION IS TO BE INCLUDED FOR EACH FIXTURE TYPE AND SHALL BE LABELED PER FIXTURE TYPE.

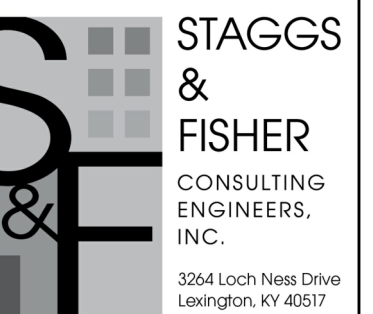
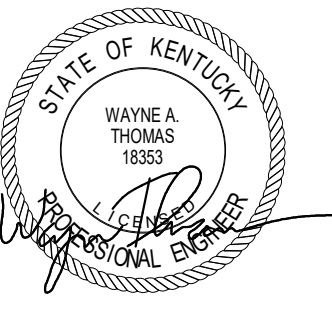
Table with columns: LIGHTING SEQUENCE OF OPERATIONS SCHEDULE, ROOM NUMBER, ROOM NAME, NOTE NUMBER. Lists lighting sequences for various rooms like corridors, classrooms, and restrooms.

Table with columns: LIGHTING SEQUENCE OF OPERATIONS SCHEDULE, ROOM NUMBER, ROOM NAME, NOTE NUMBER. Lists lighting sequences for various rooms like classrooms, restrooms, and storage areas.

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3225 Summit Square Place, Suite 300  
Lexington, Kentucky 40509  
859.252.6781



CONSTRUCTION DOCUMENTS  
NEW MIDDLE SCHOOL - POLO CLUB  
FAYETTE COUNTY PUBLIC SCHOOLS  
LEXINGTON, KENTUCKY



ELECTRICAL

PROJECT 2019111  
DATE 06/14/22

REVISIONS

Table with columns: No., Description, Date. Revision 1: Addendum 1, 07/13/2022

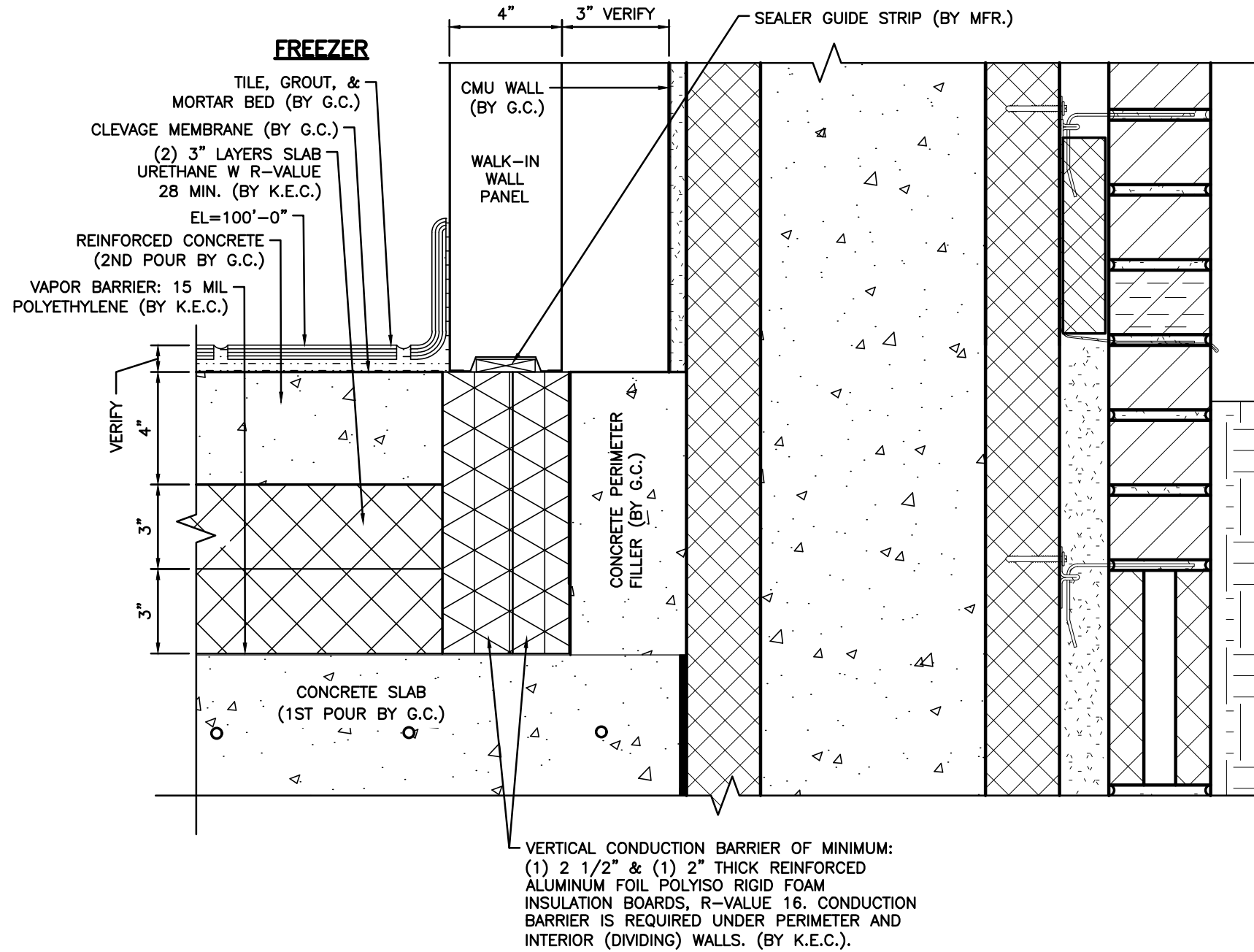
JRA ARCHITECTS HAS RETAINED AN ELECTRONIC VERSION OF THESE DRAWINGS. THE CLIENT AGREES NOT TO REUSE THESE DRAWINGS IN ELECTRONIC OR ANY OTHER FORMAT, IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT. THE CLIENT AGREES TO HOLD JRA ARCHITECTS HARMLESS FROM ANY UNAUTHORIZED REUSE OF THESE DRAWINGS IN ANY WAY FROM ANY UNAUTHORIZED PERSONS FOR ANY OTHER PROJECT BY ANYONE OTHER THAN THE ARCHITECT.

LIGHT FIXTURE SCHEDULE & LIGHTING SEQUENCE OF OPERATIONS

E-130



REFERENCE ARCHITECTURAL AND  
STRUCTURAL DRAWING SHEETS  
FOR BUILDING WALL DETAILS.



1 WALK-IN DETAIL @ FLOOR  
FS-100 SCALE: NONE

NOTES  
WALK-IN FLOOR DETAIL  
1 / FS-100 REVISED.

**NEW MIDDLE SCHOOL - POLO CLUB**  
**FAYETTE COUNTY PUBLIC SCHOOLS**

REFERENCE SHEET

**FS-102 - FOOD SERVICE EQUIPMENT FLOOR PLAN**

**JOBY SMITH**  
**& ASSOCIATES, INC.**

COMMERCIAL FOOD SERVICE CONSULTANTS  
7 East Avenue - Monroe, Ohio 45050  
Phone: 513-360-7264 Fax: 513-402-7109

KDE BG # 21-176  
DATE 06/30/2022  
PRODUCED BY J.S.A.  
ADDENDUM NO. 1

**FSSK-01**



**PRE-BID SIGN-IN SHEET**

New Polo Club Middle School

KDE BG #21-176

FCPS Bid #48-22

Date: 7/15/2022

Time: 2:00PM

Location: 128 Walton Avenue

**Attending:** (please print)

**Name:**

Melinda Joseph-Dezarn

Rob Deal

Inga Hardman

Steve Sax

GARY TOUT

SCOTT CONNELL

Chris C Christman

Brian McMillan

Bobby Kluber

Sarah Gaines

Jeff Edwards

Andrew Boring

RYAN GRAHAM

MATT JUMP

GREG KRASSIG

Sean Edwards

Derek Craignyle

Madison Bourgeois

Joe Watson

Picky Walker

JOHNSON WERNER

Colby Alexander

David Vanhusier

Doug Rakerol

Hurree Faney

Bill Hosteller

**Representing:**

FCPS

JRA Architects

JRA Architects

CKG

RISING SUN

" "

CARMAN

Brown + Kubican

SLI

FCPS

Du u i

Siemens

S+F

STF

SF/KFI

Sid/RCM

PPG

CCI

East KY Masonry

Mi-Di Inc.

SCHILLER

Frei mechanical

Frei MECHANICAL

Frei mechanical

American Roofing

CPE

**Contact:** (e-mail)

melinda.josephdezarn@fayette.kyschools.us

rdeal@jrarchitects.com

ihardman@jrarchitects.com

sax@ckgemil.com

GTOUT@RSAINC.COM

SCOTTC@RSAINC.COM

Chris C Carmensite.com

bmcmillan@bksc.net

bkluber@butessecurity.com

Sarah.gaines@fayettekyschools.org

Jedwards@duweilbrn.com

andrew.boring@siemens.com

rgraham@kfi-eng.com

Majump@kfi-eng.com

gkrassig@kfi-eng.com

Seanedwards88@gmail.com

dcraignyle@ppg.com

Mbourgeois@ClevelandConstruction.com

jwatson@ekmllc.net

Midi240-county.com

JWERNER@GOSCHILLER.COM

colby@freimechanical.com

david@freimechanical.com

cong@freimechanical.com

Hraney@AmericanRoofingOnline.com

cpepol@windstream.net

JRA Architects

3225 Summit Square Place, Suite 200 Lexington, KY 40509

Tel: 1-859 252-6781 Fax: (859) 255-5483 www.jrarchitects.com