

ADDENDUM NO. 2

TO THE DRAWINGS AND SPECIFICATIONS
FOR THE
Harrison Elementary School-Preschool Addition & HVAC Upgrade
Lexington, Kentucky
RTA 2251
BG 23-124
FCPS Bid 56 -23
November 9, 2023

To All Plan Holders of Record:

This Addendum modifies bid documents dated October 23, 2023, for the above project and shall become part of said documents in the preparation of proposals and execution of work of the subject project.

General:

1. Refer to the **attached Addendum #2- MEP** dated 11/08/2023 from KFI Engineers.

Specifications:

1. Refer to Specification section 004111:

- a) Replace the section with the **attached revised section 004111.**

2. Refer to Specification Section 012100:

- a) Add the following:
 - i) 1.03.B. Allowance No. 2: Provide a lump sum (cash) allowance of \$700.00 for hardware inspection as outlined in Specifications Section 087100 – Door Hardware. Comply with all contract document requirements.
 - ii) 1.03.C. Allowance No. 3: Provide a lump sum (cash) allowance of \$450.00 for the administrative fee associated with the Owner-paid sewer tap-on fee. Comply with all contract document requirements.
 - iii) 1.04 LUMP SUM (CASH) ALLOWANCES
 - A. Costs included in lump sum (cash) allowances: Cost or product or service to Contractor.
 - B. Contractor shall provide documentation, invoices, delivery orders and other information to document the costs under each lump sum (cash) allowance.
 - C. Differences in costs will be adjusted by Change Order. No additional overhead and profit charges will be paid for increases in lump sum (cash) allowances.

3. Refer to Specification Section 15000

- a) 1.21.C. Remove the statement "Sign posts shall be 4" x 4" posts set in 1' diameter holes 3'-6" deep filled with concrete" and replace it with "Project sign may be anchored to the construction fence."
- b) 1.22 Replace A with follow:
 - A. Contractor's option to provide a field office on-site.
 1. Progress meetings will be held in the school at a location to be determined.
 2. If a field office is provided:
 - a) Field office to be on-site, with functioning utilities, a minimum of one week prior to the first scheduled progress meeting.

- b) Field office(s) utilities are to be metered separately from construction-related utilities. Field office utilities are to be paid for by the contractor.
- a) Delete 1.22. B, 1.22. C, and 1.22.D.
- b)
- 4. Refer to **attached Specification Section 055213** for Pipe and Tube Railing.
- 5.
- 6. **Refer to Specification Section 074264:**
 - a) Add “with at least one red, green, blue, and gray Kynar color available for both panels and moldings.” to the end of 2.04.A.1.a.
 - b) Add “phenolic resin or” to 2.03A after “a core of”.
- 7. **Refer to the Specification section 087100:**
 - a) Add 1.3 for allowance as described in **attached revised specification.**
- 8. **Refer to Specification Section 123550:**
 - a) 1.02. Related requirements. Remove B.
- 9. **Refer to Specification 099000:**
 - a) Section 2.04 PAINT SYSTEMS – EXTERIOR. Add the following:
 - E. Exterior Finish Coats – Masonry
 - 1. Sherwin Williams Loxon Self-Cleaning Acrylic Coating – Flat LX13-50 Series
 - b) Section A – Exterior Primers. 2.04 PAINT SYSTEMS – EXTERIOR. Add the following:
 - 3. Exterior Concrete and Masonry Primer: Factory formulated alkali resistant acrylic latex primer for exterior application.
 - a. Sherwin-Williams Loxon Concrete & Masonry Primer LX02W0050 VOC 99 g/l 3.2 mils. DFT
 - b. PPG Industries Perma-Crete Int/Ext Alkalie Resistant Primer 4-603VOC< 100 g/l
 - c. Benjamin Moore & Co. Products Concrete and Masonry, N068 Super Spec Masonry High Build Primer
 - c) Section 3.08 EXTERIOR PAINT SCHEDULE. Add the following:
 - C. Masonry: Provide the following finish systems over existing exterior brick.
 - 1. Self-Cleaning Acrylic Finish: Two finish coats over masonry primer-sealer
 - a. Primer: Masonry Primer-Sealer
 - b. Finish Coats (Minimum Two): Self-Cleaning Acrylic Coating - Flat

Drawings:

- 1. **Refer to sheet SD0.2:**
 - a) Adjust asphalt demolition as shown on **attached sheet SD0.2.**
- 2. **Refer to Sheet SD1.1:**
 - a) Revise tag list, and adjust limits of new asphalt as shown on **attached sheet SD1.1.**
- 3. **Refer to Sheet SD2.1:**
 - a) Adjust grading as shown on **attached sheet SD2.1.**
- 4. **Refer to Sheet SD3.1:**
 - a) Revise tag list as shown on **attached sheet SD3.1.**
- 5. **Refer to Sheet SD3.2:**
 - a) Revise tag list, and revise playground equipment layout as shown on **attached sheet SD3.2.**
- 6. **Refer to Sheet SD4.2:**
 - a) Remove detail T/SD4.2.
 - b) Revise detail N/SD4.2 to be 8’ Height Chain-link Fence as shown on **attached sheet SD4.2**
- 7. **Refer to Sheet SD4.3:**
 - a) Detail D. Update note regarding handrail to read “1 ½” Outer Dia. Galvanized Steel Pipe.”
- 8. **Refer to Sheet SD4.4:**
 - a) Remove note on detail A/SD4.4 about owner-provided windscreen as shown on **attached sheet SD4.4**
- 9. **Refer to sheet A6.1:**

- a) Door and Frame Schedule. Revised the door and frame schedule to adjust the thickness of hollow metal frames from 5 $\frac{3}{4}$ " to 8 $\frac{1}{4}$ ". Modify the door frame thickness for aluminum frames, changing it from 4" to 4 $\frac{1}{2}$ ".

END OF ADDENDUM

ADDENDUM



Date: 11/08/2023
Project: Harrison Elementary School Renovations

KFI Project Number: 23-0180.00

Addendum Number: 2

THIS ADDENDUM IS A CONTRACT DOCUMENT AND MAY APPLY TO ANY OR ALL CONTRACTS AND SUBCONTRACTS UNLESS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE ATTACHED DRAWINGS (IF ANY). ALL WORK REQUIRED BY THIS ADDENDUM SHALL BE IN COMPLETE ACCORD WITH THE CONTRACT DOCUMENTS AND SUBSEQUENT ADDENDA THERETO. THE ITEMS LISTED IN THIS ADDENDUM ARE NOT IN ANY ORDER IN REGARD TO THE DRAWINGS OR THE SPECIFICATIONS. ALL CONTRACTORS ARE CAUTIONED TO EXAMINE EACH AND EVERY ITEM OF THIS ADDENDUM.

THE FOLLOWING CHANGES OR CLARIFICATIONS TO THE PLANS & SPECIFICATIONS SHALL BE INCLUDED AS PART OF THE CONTRACT DOCUMENT

PLUMBING

SPECIFICATION CHANGES:

1. **Section 220500-Common Work Results for Plumbing:**
 - a. Sewer Tap-On fee
 - i. Allowance: Contractor pays Administrative Fee of \$450
 - ii. Owner (FCPS) shall pay sanitary tap-on fee of \$5,954

PLAN SHEET CHANGES:

2. Sheet M7-1 :
 - a. Changed exterior section of below-grade sanitary piping from demolished to abandoned.
 - b. Updated Key Notes 3 and 9 regarding abandoned sanitary piping and work in Right-of-Way.
 - c. Added Key Note 10 regarding abandoned sanitary piping.
3. Sheet M7-2 :
 - a. Changed exterior section of below-grade sanitary piping from demolished to abandoned.
 - b. Updated Key Note 16 to state "CONTRACTOR SHALL COORDINATE ALL WORK IN RIGHT OF WAY WITH LFUCG AND ALL APPLICABLE STATE AGENCIES, OBTAIN RIGHT OF WAY WORK PERMITS, AND PAY ALL APPLICABLE FEES AS REQUIRED. REPAIR RIGHT OF WAY PER LFUCG STANDARDS."

ADDENDUM



MECHANICAL

SPECIFICATION CHANGES:

Section 23 0800 - Fundamental Commissioning of HVAC

1. There will be no existing generator testing required for this project.

Section 23 0900-Instrumentation and Control for HVAC

1. Item 3.3, (28 hours total training)

B – Provide a minimum of one (1) on-site, on-line, or classroom training sessions throughout the contract period for personnel designated by the owner. Session shall be a minimum of four (8) hours.

C – Provide additional training sessions at 6 and 12 months following building's turnover. Each session shall be six (6) hours each and must be coordinated with the building owner.

D - Provide 8 (Eight) hours of site specific training for Owner's operating personnel.

2. Fire Alarm panel does NOT need to be monitored or integrated with the HVAC Controls.
3. Existing HVAC controls at Harrison ES are Siemens.
4. Existing and new controls shall be...
 - a. The new DDC system (management, building, field/terminal level) shall require all new Tier 1 & Tier 2 devices necessary for the new equipment (Split-Systems + DOAS + WSHP's + Cooling Tower) and be able to monitor and/or control and/or integrate existing items listed below that the school is able to currently monitor/control.
 - i. Condenser Water Supply and Return Temperature
 - ii. Zone Pump Start/Stop and Status-include hardwire & integration.
 - iii. Cooling Tower Start/Stop and Status – To be obtained from new cooling tower control panel.
 - iv. Cooling Tower Fan Start/Stop and Status – To be obtained from new cooling tower control panel.
 - v. Boiler Start/Stop and Status.
 - vi. Boiler Pump Start/Stop and Status.
 - vii. Outside Air Temperature.
 - viii. Hot Water Valve Percentage.
 - ix. Zone Enable.
 - x. MAU Control (Qty-4): Monitor Start/Stop Status
5. The controls contractor does not need to provide any VFD's.
 - a. Integrate existing VFD's (condenser pumps)
 - b. The cooling tower manufacturer shall provide the VFD for the fan(s) on the cooling tower.
 - i. A control panel will be provided by cooling tower manufacturer that is to be mounted out near the cooling tower for HVAC controls contractor to integrate.
6. WSHP Connection Sizes for Control Valves.

ADDENDUM



- a. HP-2 : 2"
- b. HP-3 : ¾"
- c. HP-5 : ¾"
- d. HP-6 : ¾"
- e. HP-7 : ¾"
- f. HP-8 : ¾"
- g. HP-9 : ¾"
- h. HP-10 : ½"
- i. HP-11 : ½"
- j. HP-12 : ¾"
- k. HP-13 : ¾"
- l. HP-14 : 1.25"

7. Cooling Tower points list, sequence, and diagram is provided in the attached addendum.

Section 236513-Forced-Draft Cooling Towers

1. Cooling Tower is provided with control panel by manufacturer. This panel shall be locate outside the building near the cooling tower in a NEMA-3R enclosure.

Section 23 7223-Packaged Air-to-Air Energy Recovery Units

2. DOAS 1, 2, & 3 shall be integrated to the BAS system through the equipment manufacturer provided BACnet card.

Section 23 8146-Water-Source Unitary Heat Pumps

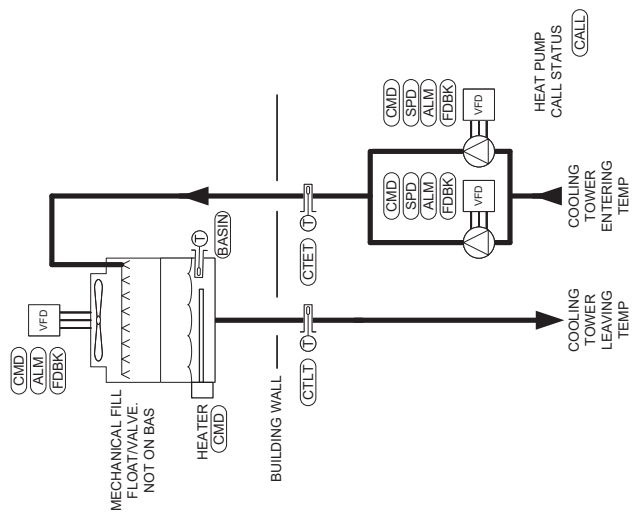
1. All WSHP motors shall be 5-speed ECM motor **(3-wire conductor)**
2. Five existing heat pumps shown on sheet M4.2 shall have new controls added to these units to be integrated into the new BAS. These five units do not have water-side economizers.
3. All WSHP's do not require hot-gas bypass with the following exceptions below.
 - a. Four WSHP's serving the gym/auditorium and cafeteria (HP-2 & HP-14) shall have hot-gas bypass for dehumidification control.
 - i. Model UDH shall replace NLH on schedule for HP-2 & HP-14.

ELECTRICAL

PLAN SHEET CHANGES:

1. Sheet E6-1:
 - a. Added additional information to sheet note about the existing switchboard.

END OF ADDENDUM



A. COOLING TOWER CONTROL

1. VFD shall include a minimum of three points – DDC output to issue command and DDC inputs to receive frequency feedback (Hz) and Alarm.
2. Frequency shall be used to determined motor status. If the frequency feedback is greater than 8 Hz the motor shall be considered on. Virtual status value shall be included on the graphics.
3. When the condenser water system is disabled, cooling tower fan shall be off.
4. The condenser water system shall be enabled whenever any associated heat pump is active or when time scheduled on.
 - a. The initial time schedule shall be occupied Mon-Fri 7:00 am to 5:00 pm, and unoccupied otherwise. Schedule shall be adjustable on EMS.
5. Cooling towers are dedicated to each chiller and shall only be enabled when the associated chiller is enabled. Additional cooling towers shall only be staged on when an additional chiller is staged on.
6. When a chiller is being staged off, the associated tower shall ramp down and be commanded off.
7. Cooling tower leaving water temperature setpoint shall be equal to the outside air wet bulb temperature plus an offset of 5°F (adj.). The setpoint shall be limited to a minimum of 65°F (adj.) and a maximum of 85°F (adj.).
8. When enabled, each cooling tower shall modulate its fan to maintain its associated leaving water temperature at the calculated setpoint.
 - a. Tower fan speeds shall modulate independently between minimum and 100% to maintain the associated tower leaving water temperature at the calculated setpoint.
 - b. If tower fan speed signal falls to minimum and the tower leaving water temperature is below setpoint by 2°F (adj.) for 5 minutes (adj.), the tower fan shall be commanded off.
 - c. The tower fan shall be commanded on again when the leaving water temperature rises above setpoint plus 2°F.
9. Cooling tower basin temperatures shall be monitored. Basin heaters shall be enabled when basin temperature reaches 38°F and shall be disabled when basin temperature rises above setpoint plus a 4°F differential. Issue a low limit temperature alarm if basin temperature falls below 35°F for 5 minutes.

HARDWARE POINTS	AI	AO	DI	DO	INT	NET	FAIL POS	NOTES
Heat Pump Call Status			2					A
Cooling Tower Fan Command				1			Off	
Cooling Tower Fan Alarm			1					
Cooling Tower Fan Frequency	1							
Cooling Tower Entering Water Temp	1							
Cooling Tower Leaving Water Temp	1							
Cooling Tower Basin Temperature	1							
Cooling Tower Heater Command				1			Off	

Notes:

- A. Receive condenser water pump call from each heat pump.

B. CONDENSER WATER PUMP CONTROL

1. VFD shall include a minimum of four points – DDC outputs to issue command and speed, and DDC inputs to receive frequency feedback (Hz) and Alarm.
2. Frequency shall be used to determined motor status. If the frequency feedback is greater than 8 Hz the motor shall be considered on. Virtual status value shall be included on the graphics.
3. When the condenser water system is disabled, pumps shall be off.
4. The condenser water system shall be enabled whenever any associated heat pump is active or when time scheduled on.
 - a. The initial time schedule shall be occupied Mon-Fri 7:00 am to 5:00 pm, and unoccupied otherwise. Schedule shall be adjustable on EMS.

5. Lead/Lag rotation method shall be based on runtime. Runtime difference changeover setpoint shall be initially set to 168 hours (adj.) and displayed on graphics. Initial rotation method shall be selected as runtime.
6. When rotating pumps, the new lead shall enable and ramp up to speed as the new lag ramps down to minimum speed and disables.
7. If a pump fails, the next available pump shall be enabled and the failed pump shall remain enabled. Once status returns on failed pump, failover strategy shall automatically be reset and the additional pump shall be disabled.
8. When the condenser water system is enabled, the condenser water pump shall be commanded on. Condenser pump speed is constant, set on EMS. Pump speed shall be set as determined by the TAB contractor.

HARDWARE POINTS	AI	AO	DI	DO	INT	NET	FAIL POS	NOTES
Heat Pump Call Status			2					A
Condenser Water Pump Command				2			Off	
Condenser Water Pump Alarm			2					
Condenser Water Pump Frequency	2							
Condenser Water Pump Speed		2					Min	

Notes:

A. Receive condenser water pump call from each heat pump.

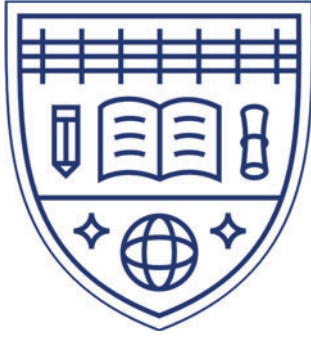
SECTION 004111 REVISED FOR ADDENDUM NO. 2
FCPS SUPPLIER DIVERSITY PROGRAM CONTRACT FORMS

PART 1 GENERAL

1.01 FCPS SUPPLIER DIVERSITY PROGRAM CONTRACT FORMS

- A. Bidders shall submit Supplier Diversity Program forms with their bid as outlined in Specifications Section 002114 - Supplemental Instructions to Bidders.

END OF SECTION



Fayette County Public Schools

SUPPLIER DIVERSITY PROGRAM CONTRACT FORMS

Sarah A. Gaines, Manager
Economic Development
Fayette County Public Schools
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Lexington, Kentucky 40505
859-381-3817
sarah.gaines@fayette.kyschools.us

**NOTICE OF EXPECTATION
TO SUPPORT EQUAL OPPORTUNITIES FOR
MINORITY, WOMAN, AND VETERAN-OWNED BUSINESS ENTERPRISES (M/W/VBE)
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, woman, and veteran-owned business enterprises (M/W/VBE) as its vendors, professional service providers, and construction contractors. Our goal is to spend 13% 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 M/W/VBE as subcontractors and suppliers.

FCPS will implement a new procedure for the submittal of bids on this project. Contractors are to place their bid bond in one envelope, their M/W/VBE participation documents in a second envelope, and their bid (proposal) in a third envelope. All three envelopes must be distinctly labeled (#1, #2, #3) and placed in a large, single envelope labeled with the project name, bid number, and company name. The contents in envelopes #1 and #2 must be complete and acceptable for the bid (envelope #3) to be opened and considered.

Nevertheless, nothing about this new procedure, 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 (M/W/VBE) subcontractors, please follow this link to the FCPS Economic Development M/W/VBE website: fcps.net/mwvbe or contact Sarah Gaines, Manager of Economic Development.

Fayette County Public Schools
M/W/VBE 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 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 shall accept M/W/VBE certification from any recognized certifying entity, including, but not limited to Tri-State Minority Supplier Development Council (TSMSDC), 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 MWBE), 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 M/W/VBE.

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 13% of the value of the total contract as a goal for participation of M/W/VBE on this contract.
- 3) **It is therefore an expectation that each Bidder include in its bid the same goal for M/W/VBE participation and other requirements as outlined in this section. Furthermore, the expectation is that the 13% will include 5% MBE participation, 5% WBE participation, and 3% VBE participation.**

C. PROCEDURES

- 1) The successful bidder will be required to report to FCPS the dollar amounts of all payments submitted to M/W/VBE subcontractors and suppliers for work done or materials purchased for this contract. (See Section D.3.e below.)
- 2) Replacement of a M/W/VBE 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 M/W/VBE; this is subject to approval by FCPS. (See FCPS M/W/VBE Substitution Form.)

- 3) For assistance in identifying qualified certified M/W/VBE businesses to solicit for potential contracting opportunities, follow this link to the FCPS Economic Development M/W/VBE website: fcps.net/mwbe or contact the Department of Economic Development at (859) 381-3817.
- 4) FCPS will make every effort to notify interested M/W/VBE 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 13% Goal for M/W/VBE 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 written detailed documentation of their Good Faith Efforts to do so in envelope #2.**
- 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 M/W/VBE. **To be submitted in envelope #2.**
 - b. M/W/VBE Good Faith Effort Supplemental Sheet: This form will be used to capture information regarding solicitation of M/W/VBE for this contract. **To be submitted in envelope #2.**
 - c. M/W/VBE Participation Form: This form verifies the M/W/VBE subcontractors and material suppliers to be used on this project. **To be submitted in envelope #3.**
 - d. M/W/VBE Utilization Form: This form is intended to capture the M/W/VBE 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 M/W/VBE subcontractor or material supplier. **To be submitted within 24 hours of Bid opening.**
 - e. Electronic M/W/VBE Subcontractor Payments: If awarded this contract, the prime contractor is obligated to submit a monthly report of all payments made to any M/W/VBE subcontractors or suppliers working on this project. M/W/VBE subcontractors are obligated to acknowledge receipt of payments made to them by prime contractors. These electronic reports will be made and acknowledged monthly in the FCPS Diversity Compliance portal at <https://fcps.diversitycompliance.com>

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

- f. M/W/VBE Subcontractor Substitution Form: If a M/W/VBE contractor selected for this project is not able to meet the obligations as assigned, the prime contractor is obligated to replace that M/W/VBE subcontractor through the Good Faith Effort steps outlined in this document and to secure another M/W/VBE 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 M/W/VBE substitutions are made.**

- g. Waiver Form: Contact 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.

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.

GOOD FAITH EFFORT SCORING SYSTEM

Bidders who utilize subcontractors shall make good faith efforts to meet the District's M/W/VBE 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 are MBEs, WBEs, or VBEs or 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 that is equivalent to 81% of the awarded contract value and not meeting the goals of M/W/VBE participation shall, at a minimum, have a total score of 70 points on the M/W/VBE 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 M/W/VBE participation shall, at a minimum, have a total score of 80 points on the M/W/VBE 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. These documents should be placed in envelope #2.*

NEW FORM ADDED FOR ADDENDUM #2

Fayette County Public Schools
M/W/VBE Participation Goal of 13% is Met
(Form to be submitted in Envelope #2)

If Bidder/Contractor **has met or exceeded the 13% M/W/VBE goal** and documentation will be included in Envelope #3, sign below and insert this document in Envelope #2.

Project Name: _____

Project Bid/RFP#: _____

Bidder/Contractor: _____

Bidder/Contractor Signature _____ **Date** _____

_____ **Title**

REVISED FORM FOR ADDENDUM #2

GOOD FAITH EFFORT SUMMARY SHEET

**THIS DOCUMENT MUST BE COMPLETED, SIGNED, AND SUBMITTED
IN ENVELOPE #2, IF YOU HAVE NOT MET THE GOALS.**

Project Name:		Project Bid #:	
Contractor Signature:		Date Submitted:	
Contact Person:			
Address:		Phone #:	
Email:			
Points	Bidder Action(s)	Points Awarded	
	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.	Economic Development	Purchasing
50 Points	Action 1. Solicitations, Written Notices, etc.: Solicited through all 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 and/or the FCPS Economic Development website, 3) sent written notices of proposal by certified mail or e-mail to at least five (5) qualified, certified M/W/VBE soliciting their participation in the contract. To be considered reasonable, the bidder should solicit this interest at least 14 days before the FCPS bid due date to allow M/W/VBE sufficient time to respond to the solicitation. (Complete attached sheet.)		
15 points	Action 2. Follow-up: Followed up initial solicitations of interest by contacting M/W/VBE to determine their level of interest, conferred with qualified, certified M/W/VBE 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 M/W/VBE's participation to increase the likelihood of meeting the goals, including breaking down contracts into economically feasible units. (Complete attached sheet.)		
5 points	Action 3. Evidence of Justification for Bid Rejection: If participation of specific M/W/VBE was considered, the bidder did not reject M/W/VBE as being unqualified without sound reasons based on a thorough investigation of their capabilities. An M/W/VBE 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 M/W/VBE subcontractor proposals when considering the contractor's efforts to meet the project goal. Pricing is an acceptable justification to reject a bid. However, you must include a copy of the bid and the lower/lowest bid. (Complete attached sheet.)		
10 points	Action 4. Advertisement: Advertised opportunities to participate in the contract in general circulation media, trade and professional association publications, 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 that reflect the first date the advertisement was published.)		
10 points	Action 5. Community and Other Organizational Services Support: Effectively used the services available to minority, women, and veteran community organizations, 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 M/W/VBE (i.e. Kentucky APEX Accelerator, Commerce Lexington, KY Chamber Foundation, etc.). (Attach proof of use or contact.)		
5 points	Action 6. Ongoing Mentor/Protégé Relationships: The bidder is actively participating in an ongoing mentor/protégé relationship with an M/W/VBE in the assistance of their business growth and development (Attach proof of program.).		
5 points	Action 7. Attendance at a FCPS sponsored M/W/VBE Event: The bidder attended a FCPS session within 6 months of the time of the bid. (Attach evidence of attendance.).		
Total Points			
For Envelope #3 (bid) to be opened, Bidders must have:			
Minimum 70 points for Bidders who self-perform work equivalent to 81% or more of awarded contract value.			
Minimum 80 points for Bidders who self-perform work equivalent to 80% or less of awarded contract value.			
Estimated percentage of work to be self-performed by your company _____%			
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)			

**Fayette County Public Schools
M/W/VBE GOOD FAITH EFFORT
SUPPLEMENTAL SHEET**

(Form to be submitted in **envelope #2**)

This sheet must be completed to receive the Bidder Action Points 1, 2 and 3.

For each M/W/VBE 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.

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

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

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

**Fayette County Public Schools
M/W/VBE Participation Form**

(Form to be submitted in envelope #3)

If awarded this bid/proposal, the Bidder/Contractor will subcontract with the following M/W/VBE subcontractors/material suppliers:

Project Name: _____

Project Bid/RFP#: _____

Bidder/Contractor: _____

Contact Person: _____

Total Bid/Estimate: \$ _____

Total MBE \$ _____	Total WBE \$ _____	Total VBE \$ _____	Total M/W/VBE \$ _____
Total MBE % _____	Total WBE % _____	Total VBE % _____	Total M/W/VBE % _____

Service/Supply to be Subcontracted	M/W/VBE Company	Phone Number	Contact Person	MBE/WBE/VBE Total \$

Which describes the bidder's/contractor's company? __ MBE __ WBE __ VBE __ N/A

(For each M/W/VBE 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 M/W/VBE subcontractor, I will adhere to the replacement requirements set forth in the Fayette County Public Schools' bid documents.

Bidder/Contractor Signature

Date

Title

Fayette County Public Schools
M/W/VBE 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 M/W/VBE 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 M/W/VBE subcontractor and material suppliers and submitted as part of the bid or proposal package.

M/W/VBE Company: _____

Contact Person: _____

Address: _____

Phone: _____

Email: _____

M/W/VBE Subcontractor/Material Supplier Price Agreed: \$ _____

Description of Work: _____

Additional Notes: _____

I hereby certify that the above information is correct.

M/W/VBE Signature

Date

Bidder/Contractor Signature

Date

Title

Title

Submit Separate Form for each M/W/VBE Subcontractor/Material Supplier Utilized

Attach M/W/VBE Certification

Fayette County Public Schools
M/W/VBE Subcontractor Substitution Form
 (Form to be utilized by awarded general contractor, as necessary)

Date: _____

Bid/RFP/Quote Reference # _____

Prime Total Contract Awarded \$ _____

The substituted M/W/VBE 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 M/W/VBE subcontractor is required below.

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

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 Fayette County Public Schools' purchasing documents.

Prime Contractor/Title

M/W/VBE Subcontractor/Title

Date

Date

Fayette County Public Schools
Waiver for Participation of Minority, Woman, and Veteran-Owned
Business Enterprises
(Form to be submitted in **envelope #2**)

Project Name: _____

Project Bid#: _____

Bidder/Contractor: _____

Contact Person: _____

Address: _____

Phone: _____

Email: _____

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

_____ Items being bid are not applicable for subcontracting.

_____ Other (Provide detailed explanation.) _____

I certify that the above information is true, accurate, and complete and reflects our commitment to support the minority, woman, and veteran-owned business enterprise initiative of Fayette County Public Schools. I further certify that I have not knowingly concealed or in any way falsified or misrepresented any information in this document.

Bidder/Contractor Signature

Date

Title

**SECTION 055213
PIPE AND TUBE RAILINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior handrails in steel.

1.02 RELATED REQUIREMENTS

- A. Section 013800 - General Requirements: Submittal procedures.
- B. Section 033000 - Cast-in-Place Concrete: Placement of anchors in concrete.
- C. Section 099000 - Painting: Paint finish.

1.03 REFERENCE STANDARDS

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.
- B. ASTM B211 - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2012.
- C. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube; 2010.
- D. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications; 2013.
- E. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2013.
- F. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).

1.04 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- B. Submit painting and coating product data.
- C. Structural Design Data: Where installed metal fabrications are indicated or required to comply with certain design loadings, include structural computations, material properties, and other information needed for review of structural analysis. Computations and analysis shall be stamped by a structural engineer licensed to practice in Kentucky.

1.05 QUALITY ASSURANCE

- A. Steel Handrails and Railings:
 - 1. Fabricator Qualifications: Company specializing in assembling and installing the steel pipe and tube railing as indicated on the drawings and specified in this section with a minimum five years documented experience.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver railing systems and related components in protective packaging.
 - 1. Upon delivery open cartons and inspect for damage.
 - 2. Maintain material in original packaging until installation.
 - 3. Store components to avoid damage from moisture, abrasion, and other construction activities.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.
- B. Design railing assembly, wall rails, and attachments to resist lateral force of 75 lbs at any point without damage or permanent set. Test in accordance with ASTM E 935.
- C. Structural Performance of Handrails and Railings: Provide handrails and railings capable of withstanding the following structural loads without exceeding allowable design working stresses of materials for handrails, railings, anchors, and connections:
 - 1. Top Rail of Guards: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf (890 N) applied at any point and in any direction.
 - b. Uniform load of 50 lbf/ft. (730 N/m) applied horizontally and concurrently with uniform load of 100 lbf/ft. (1460 N/m) applied vertically downward.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 2. Infill Area of Guards: Capable of withstanding a horizontal concentrated load of 200 lbf (890 N) applied to 1 sq. ft. (0.09 sq. m) at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area.
 - a. Load above need not be assumed to act concurrently with loads on top rails in determining stress on guard.
- D. Allow for expansion and contraction of members and building movement without damage to connections or members.
- E. Dimensions: See drawings for configurations and heights.
 - 1. Top Rails and Wall Rails: 1-1/2 inches diameter, nominal round. (1.900 inches Outside Diameter)
 - 2. Intermediate Rails: 1-1/2 inches diameter, nominal round. (1.900 inches Outside Diameter)
 - 3. Posts: 1-1/2 inches diameter, nominal round. (1.900 inches Outside Diameter)
- F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
- G. Exterior Use Grout: Non-shrink Portland cement-based hydraulic grout mixed and applied in accordance with manufacturer's instructions. Gypsum based material is not acceptable.
 - 1. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating.

2.02 STEEL RAILING SYSTEM

- A. Recycled content: Provide steel products having a minimum 30% recycled content.
- B. Steel Tube: ASTM A500/A500M, Grade B cold-formed structural tubing.
- C. Steel Pipe: ASTM A 53/A 53M, Grade B Schedule 40, black finish.
- D. Galvanizing: In accordance with requirements of ASTM A123/A123M.
 - 1. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.
 - 2. All railings for exterior use are to be galvanized.
- E. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.03 FABRICATION - STEEL RAIL

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
 - 1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
 - 2. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius. Joint finish to meet NOMMA finish #2.
- E. Expansion Joints in Exterior Rails: Provide slip joint with internal sleeve extending 2 inches beyond joint on each side.
 - 1. Provide for ground/slab mounted or wall mounted railings.
 - 2. Fasten sleeve to one side only.
 - 3. Locate expansion joints to within a minimum of 6 inches to a maximum of 12 inches of a vertical post or handrail bracket.
 - 4. Provide expansion joints at intervals of maximum 20 feet on center.
 - 5. Basis of Design: Design concept and the drawings indicate the size, profiles, dimensional requirements and aesthetics of the following:
 - a. Wagner Companies: Single Lock Splice-Lock: www.wagnercompanies.com
 - b. Wagner Companies: Aluminum Internal Sleeve: www.wagnercompanies.com

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.
- B. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor railings securely to structure.
- D. Sleeve Mounting:
 - 1. Arrange for casting of sleeves or core drill insitu concrete to provide holes for railing uprights.
 - 2. After setting, fill holes with hydraulic grout; brace members until grout is cured.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055213

SECTION 08 71 00 - 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 wood and FRP swinging doors.
 - 2. Door Hardware Inspection and Re-inspections; see 087100-3.4 for the responsibilities of the Contractor.
 - 3. Field painting of removable mullions to match aluminum and hollow metal frames. See Door Hardware Sets for field painting information.
 - 4. Electrified Door Hardware. See Hardware Sets and electrical specifications for more information. Electrified door hardware includes:
 - a. Access control hardware.
 - b. Power supplies requiring 110VAC service.
 - c. Door position switches at exterior doors.
 - d. Riser and point-to-point wiring diagrams.
 - e. LED occupancy indicator system for restrooms.

1.3 ALLOWANCE

- A. Amount: Include an Allowance of \$700.00 in this contract for Door Hardware Inspection Services.
- B. Door Hardware Inspection Services
 - 1. Scope
 - a. Inspection of all swinging doors and door hardware immediately following installation.
 - b. Inspector to furnish a report, itemized per each individual opening, to the Architect within 7 days of the inspection, including:
 - 1) deficiencies in workmanship and standard industry practices,
 - 2) use of allowable products,
 - 3) use of manufacturer recommended fasteners,
 - 4) compliance with the ADA,
 - 5) proper door/frame/hardware clearances,
 - 6) problems related to function, security, aesthetics or maintenance.
 - 2. Inspector Qualifications
 - 1) Certified Architectural Hardware Consultant.
 - 2) Entirely independent of the supply side of the project, having no financial relationship with any manufacturer, manufacturer's representative, distributor, installer or supplier used on this project.

- 3) Approved by Architect. Go to <http://www.dhi.org/> for searchable list of local Architectural Hardware Consultants.

C. Payment Terms

1. Payment is to be made directly to the Inspector by the Contractor within 30 days of date of Inspector's invoice (Inspector to send copy of invoice to Architect).

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 087100-1.4.G.

- D. Qualification Data:

1. Finish Hardware Installers
 - a. Finish hardware, including electrified hardware, for wood, hollow metal, and aluminum doors to be installed by personnel trained and certified by the manufacturer of the product furnished.
 - b. Provide manufacturer's certificates for installer as part of Contractor's bid information. Failure to supply certificates may result in rejection of bid.
2. Hardware Supplier
 - a. Established contract hardware firm which maintains and operates an office, display, and stock in project area and which is a factory authorized distributor of the lock being furnished.
 - b. Hardware scheduled and furnished by or under direct supervision an Architectural Hardware Consultant.
 - c. All schedules submitted to the Architect for approval and job use must carry the signature and certified seal of this Architectural Hardware Consultant.
3. Architectural Hardware Consultant
 - a. Currently certified by the Door and Hardware Institute.
 - b. Full-time employee of the Hardware Supplier.
 - c. Available at reasonable times to Architect, Owner, and Contractor during course of work.

- E. Maintenance Data: For each type of door hardware. Include final hardware schedule, product data sheets, keying schedule, riser diagrams, and point-to-point wiring diagrams in 3-ring binder, labeled on spine with project name and "Door Hardware". **Deliver to Electronics Foreman of the Fayette County Public Schools no more than 30 days after approval of 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. Number of Copies: (5).
 - c. Sequence of Sets: Submittal hardware sets shall be in exact same order as specification hardware sets: one heading per specification and submittal hardware 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, 12.3 or 12A, 12B, and 12C, or employing similar linking logic.
 - d. Content: Include the following information:
 1. Identification number, location, hand, fire rating, and material of each door and frame.
 2. Notes included with specification hardware sets transcribed verbatim into submittal hardware sets.
 3. Type, style, function, size, quantity, and finish of each door hardware item.
 4. Complete designations of every item required for each door or opening including name and manufacturer.
 5. Degree of opening for closer and overhead stop and holder installation.
 6. Keying information.
 7. Fastenings and other pertinent information.
 8. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 9. Explanation of abbreviations, symbols, and codes contained in schedule.
 10. Mounting locations for door hardware.
 11. Door and frame sizes and materials.
 12. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.
 - a. Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.
 13. List of related door devices specified in other Sections for each door and frame.
 - e. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in Project construction schedule. Include Product Data,

Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the door hardware sets.

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

1.5 QUALITY ASSURANCE

- A. Furnish proper hardware types and quantities for door function, hardware mounting and clearances, and to meet applicable codes. Bring discrepancies to the attention of the Architect a minimum of (10) days prior to bid date so that an addendum may be issued. No additional compensation will be allowed after bidding for hardware changes required for proper function, hardware mounting or clearances, or to meet codes.
- B. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- C. Source Limitations: **All items listed by model number in this section 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. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 or UBC Standard 7-2.
 1. Test Pressure: After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches (1016 mm) or less above the sill.
- E. 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 at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Contractor, and Architect, conference participants shall also include Hardware Supplier's Architectural Hardware Consultant, and FCPS Electronics Foreman. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 2. Preliminary key system schematic diagram.
 3. Requirements for key control system.
 4. Address for delivery of keys.
- G. Preinstallation 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. **Wiring diagrams (see 087100-1.5.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 FRP doors separately to GC in timely manner so as not to delay fabrication of storefront and FRP door and aluminum frames. Balance of hardware may be delivered to GC at same time, packaged separately from 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 door numbers, and include basic installation instructions, templates, and necessary fasteners with each item or package.
- D. Deliver 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. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.

- c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
2. Warranty Period: Five years from date of Substantial Completion, except as follows:
 - a. Manual Closers: 10 years from date of Substantial Completion.

1.9 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 six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in this and door hardware sets indicated in Part 3 "Door Hardware Sets" Article.
 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by using door hardware designations, as follows:
 1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Sets" Article.
 2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.
- C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include manufacturers specified.

2.2 BUTT HINGES, GENERAL

- A. Quantity: Provide the following, unless otherwise indicated:
 1. Two Hinges: For doors with heights up to 60 inches (1524 mm).
 2. Three Hinges: For doors with heights 61 to 90 inches (1549 to 2286 mm).

3. Four Hinges: For doors with heights 91 to 120 inches (2311 to 3048 mm).
 4. For doors with heights more than 120 inches (3048 mm), provide 4 hinges, plus 1 hinge for every 30 inches (750 mm) of door height greater than 120 inches (3048 mm).
- B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- C. Hinge Height, Width, and Weight: Unless otherwise indicated, provide the following:
1. Doors with 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" standard-weight unless proper clearance requires a different width.
 4. Doors with Closers: Antifriction-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: Comply with 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. Jamb-to-Door Electric Power Transfers:
1. Power Transfer: (10) conductor, rigid tubing, two universal joints.
 2. Basis of Design for Concealed Models: Hager 2-679-0623. Equals by Von Duprin, SDC, Securitron.
- G. 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.
- H. Template Hinge Dimensions: BHMA A156.7.
- I. Available Manufacturers:
1. Bommer Industries, Inc. (BI).
 2. Hager Companies (HAG).
 3. McKinney Products Company; an ASSA ABLOY Group company (MCK).
 4. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

2.3 CONTINUOUS HINGES

- A. Configuration: Provide hinges of proper size, shape, design, model and inset for door fit and function, and consistent with series specified in hardware sets. **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. Stanley.
 - c. Select Products Limited (SPL).

2.4 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.
- D. Lock Trim:
 - 1. Levers: Cast.
 - a. Hager Archer (ARC) model with full smooth return.
 - 2. Rose and Escutcheons: Forged.
 - a. Hager Sectional (SECT).
 - b. Escutcheons: Hager (ESC).
 - 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.
 - 2. Deadbolts: Minimum 1-inch (25-mm) bolt 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 to protect frame, finished to match door hardware set, and as follows:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.

2.5 MECHANICAL LOCKS AND LATCHES

- A. Lock Types: Provide Grade 1 mortise or bored locks by same manufacturer as indicated by model number in the Hardware Schedule.
- B. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:
 - 1. Mortise Locks: BHMA A156.13.

- C. Mortise Locks: Stamped steel case with steel or brass parts; BHMA A156.13 Grade 1.
 - 1. Available Manufacturers:
 - a. Best Access Systems; Div. of The Stanley Works (BAS).
 - b. Schlage Commercial Lock Division; an Allegion Company (SCH).
 - c. Hager (HAG).

2.6 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. Hager Companies (HAG).
 - c. IVES Hardware; an Allegion Company (IVS).
 - d. Rockwood Manufacturing Company (RM).
 - e. Trimco (TBM).

2.7 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: Provide exit devices on doors servicing spaces with occupant loads of 50 or more, and as required by the National Electrical Code. 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 spacer blocks and angle brackets as needed to support and conceal mullion head cap mounting screws. Finish to match mullion head cap finish.

4. Provide mullion stabilizer sets for mullions at exterior openings.
- G. Fire-Exit Removable Mullions: Provide key removable mullions for use with fire exit 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. Mullions shall be used only with exit devices for which they have been tested.
- H. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 1. Operation: Rigid.
- I. 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.
- J. 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.
- K. Shims: Provide shims if needed for clearance.
- L. Available Manufacturers:
 1. Detex, Inc. (DTX)
 2. Hager (HAG).
 3. Von Duprin; XP99 series; an Allegion Company (VD).

2.8 LOCK CYLINDERS AND HOUSINGS

- A. Standard Lock Cylinders: BHMA A156.5, Grade 1. Provide key cylinder housings and permanent cores for all hardware requiring key cylinders to function properly. Cylinder housings must be fully warranted for use with Best 7-pin small format cylinder cores.
- 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 7-pin.
- 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 Cylinder Housings:
 - 1. Best Access Systems; Div. of The Stanley Works (BAS).
 - 2. Hager.
 - 3. Schlage.

2.9 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 and cut keys at the manufacturer's factory 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: One-hundred.

2.10 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.
- 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 or high-silicon alloy aluminum.
- 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. Do not furnish regular arm closers in areas accessible to students.

3. If tri-pack closers are furnished for regular arm applications, remove parallel arm shoe from closer box before delivering to job.
4. Parallel Arm closers are to be manufacturer's double forged rigid models.

H. Available Manufacturers:

1. LCN Closers; an Allegion Company (LCN): 4041 series.
2. Hager 5100 series.
3. Falcon SC71.

2.11 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 than 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 (IVS).
3. McKinney Products Company; an ASSA ABLOY Group company (MCK).
4. Rockwood Manufacturing Company (RM).
5. Trimco (TBM).

2.12 MECHANICAL WALL 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. Convex stops are indicated in hardware sets for estimating purposes only. Provide convex stops unless lock pushbutton function requires concave stop for proper function. Where 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 (IVS).
 - c. Rockwood Manufacturing Company (RM).
 - d. Trimco (TBM).

2.13 SILENCERS

- A. Provide silencers for Metal Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame.
- B. Available Manufacturers:
 - 1. Glynn-Johnson; an Allegion Company (GJ).
 - 2. Hager Companies (HAG).
 - 3. IVES Hardware; an Allegion Company (IVS).
 - 4. Rockwood Manufacturing Company (RM).
 - 5. Trimco (TBM).

2.14 DOOR GASKETING

- A. General: Provide continuous weather-strip gasketing on exterior hollow metal doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners as indicated by models in hardware sets.
 - 1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - 2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 - 3. Mullion Gasketing: Fasten to mullions, forming seal when doors are closed.
 - 4. Sound Door Bottoms: Apply to bottom of doors, forming seal with floor when door is closed; no moving parts; capable of lightly dragging across floor without impeding door movement.
 - 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):
- C. 1. Category A wood doors: provide models indicated in hardware sets.
- D. 2. Category B wood doors: provide NGP 9550 (or approved equal) Category G&H seals at jambs and meeting edges. If sound seals are indicated in hardware sets, provide the 9550 seals in addition to the sound seals.
- E. 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.
- F. 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.
- G. 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.
- 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. Gasketing Materials:
 - 1. Screwed-on weatherstrip: neoprene.
 - 2. Panic type thresholds: neoprene.

- J. Available Manufacturers:
 - 1. Hager Companies (HAG).
 - 2. National Guard Products (NGP).
 - 3. Pemko Manufacturing Co. (PEM).
 - 4. Reese Enterprises (RE).
 - 5. Door and Hardware Systems, Inc. (DHS).
 - 6. Zero International (ZER).

2.15 MISCELLANEOUS DOOR HARDWARE

- A. All features identical to those of items listed by model number in the hardware sets.

2.16 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.

2.17 FINISHES

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

- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. 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. Wood Doors: Comply with DHI A115-W Series.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.
 - 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. Kick, Armor and Mop Plates: install 1/4" above the bottom edge of the door.
- B. Mounting Locations:
 - 1. Wall Stops: Locate so that lockset spindle and wall stops share horizontal and vertical centerlines.
 - 2. 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.
 - 3. 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.
 - 4. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 5. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Boxed Power Supplies: Locate power supplies as directed by FCPS Electronics Foreman.

- D. 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. Provide Door Hardware Inspection Services and Field Quality Report as indicated 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 design fee paid by the Owner to the Architect.
 - b. Re-inspections by the Inspector as indicated in paragraph B.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.

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. 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 for minimum force required so that door properly latches.
 - 4. Adjust backcheck to slow door down before hitting stop point so as to prevent damage to closer, arm, door, frame, and fasteners.
- C. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DOOR HARDWARE SETS (on following page)

Set Prefixes:

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

Hardware Set ACF01 – Door VA.1

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) 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 Contact, Mortised, DPDT | 229PD | 628 | GRI |

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.

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 E01 – Doors 130A, 131B, 132B

Non-electrified Items Furnished by Contract Hardware Supplier:

(1) Continuous Hinge, Finger Safe	780-113HD	628	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

Note 1: 180 degree door swing at Doors 131B and 132B.

Furnished by Electrical Contractor:

(1) Lot: There is no electrified 'hardware' in this set. However, the Contractor shall provide, wire and power LED indicators (red for occupied, green for unoccupied) above the opening on the pull side at doors assigned to this Hardware Set. LED's shall be tied to the same PIR Motion Sensing devices which operate the lighting in these rooms.

Hardware Set 01 – Door VA.2

(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 HD CS 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 02 – Doors 130, 131, 132

(1) Continuous Hinge, Finger Safe	780-113HD	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) 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 02A – Doors 130B, 131A, 132A

(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) 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: 180 degree door swing.

Hardware Set 02B – Door 133

(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

Note 1: 180 degree door swing.

Hardware Set 03 – Door C101

(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.			
(2)	Fire Exit Device, Rim, 14	4501-RIM-F x Flush Endcap x 45BE-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
(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 04 – Door EL01

(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)	Overhead Stop, HD, Surface	7016-SRF (stop only)	630	HAG
(2)	Kick Plate	194S 12 x 2LDW x CS	630	HAG
(2)	Kick Plate	194S 12 x 1LDW x CS	630	HAG
(1)	Wall Stop, Convex	230W (non-latex insert)	626	HAG

Hardware Set 05 – Gates G4, G5, G6

(1)	Panic Device, Rim, 01	V40-W	628	Detex
(1)	Gate Panic Kit	GTPL-KIT	SLV	Detex

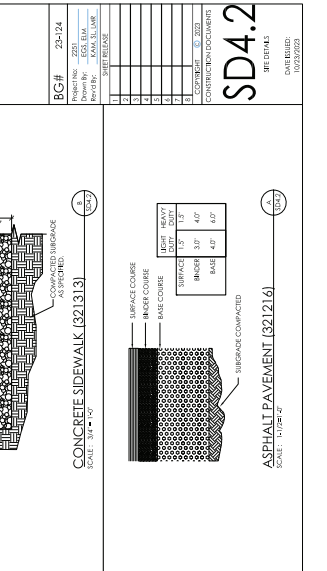
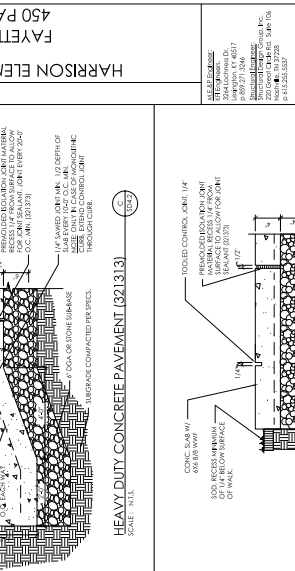
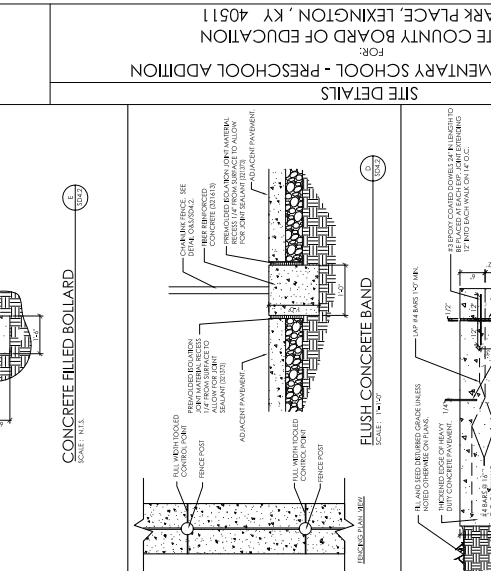
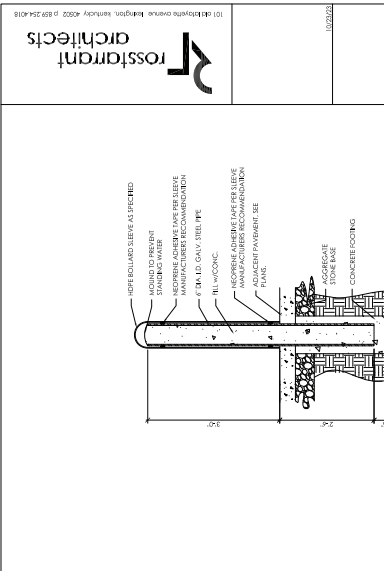
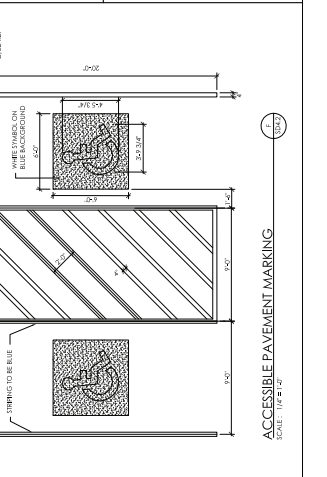
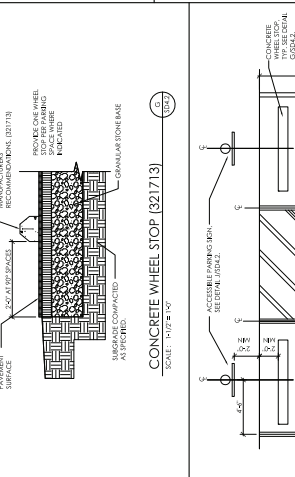
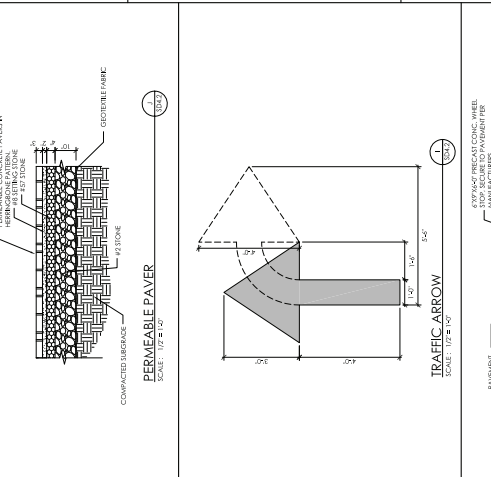
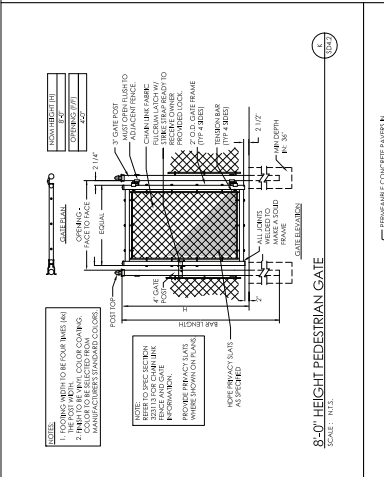
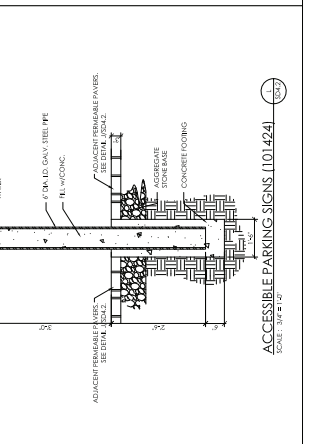
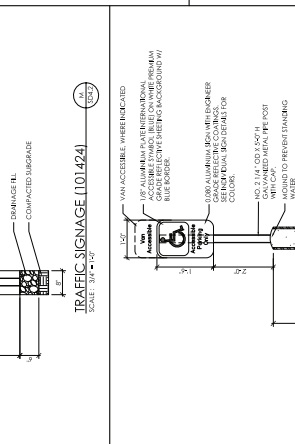
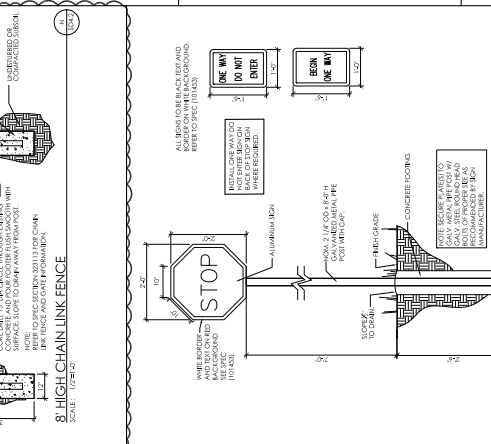
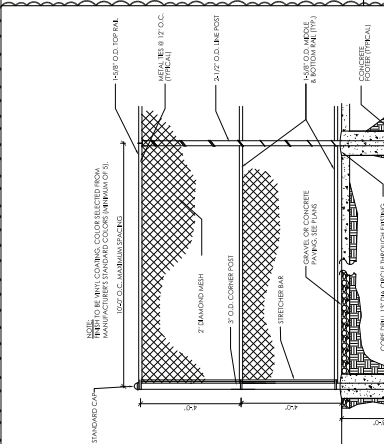
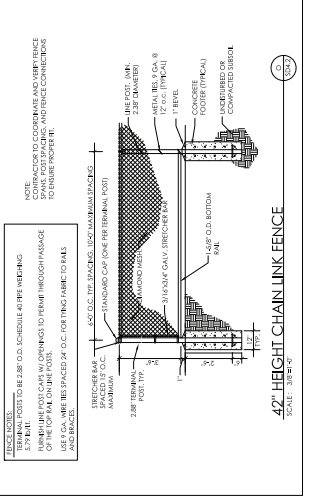
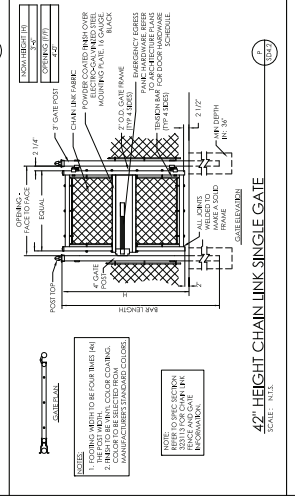
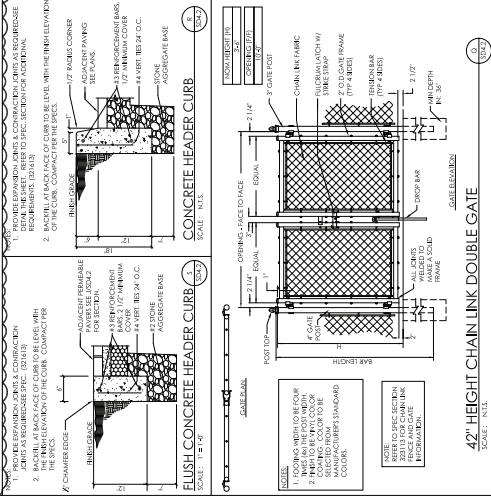
Note 1: The Contract Hardware Supplier is to furnish this hardware. Installation is by the gate supplier. Gate supplier to provide hanging and self-closing means and balance of hardware for gate.

Hardware Set 05A – Gates G1, G2, G3

(1)	Panic Device, Rim, 03	V40-W-03P-LD	628	Detex
(1)	Rim Cylinder Housing		626	BES
(1)	Key Cylinder Core	SFIC, 7-pin Cormax	626	BES
(1)	Gate Panic Kit	GTPL-KIT	SLV	Detex

Note 1: The Contract Hardware Supplier is to furnish this hardware. Installation is by the gate supplier. Gate supplier to provide hanging and self-closing means and balance of hardware for gate.

END OF SECTION 08 71 00



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