BCSC LF Smith Elementary & Columbus East High School
Bid Package #1

Addendum #2
February 6, 2025

This Addendum is hereby made a part of the Drawings and Specifications on the subject work as though originally included therein. The following amendments, additions, and/or corrections shall govern this work.

General

1. **All final Questions are to be submitted by 12:00pm on Wednesday 2/12**.
2. Please see attached supplemental documents provided by CSO.

Updated Division 00 – 01 Documents

1. Please see the updated Phasing Plan for L.F. Smith Elementary School.
   a. Revised Floor Plans to Updated Construction Drawings.
   b. Revised color of phases 3a, 6a, 7 per the schedule
   c. ADDED room B313 to phase 6a as this AHU will feed the new media center.
2. Updated Alternates Form
   a. Revised Alternates – 3, 5, 5a, 5b, 6, 6a, 6b, 6c, 7, 8.

Questions / Answers

1. It looks like Alternate 3 Bus Loop and required Detention is also listing BC-3 Concrete. Is BC-3 responsible for Site Concrete or is the site concrete in BC-2 Excavation & Paving.
   a. CM Response: Refer to MCS BC-2 & BC-3. All concrete work is by BC-3 Concrete. The concrete scope changes if the Alternate is taken.
2. Who is responsible for Schluter as noted on Sheet A800 at the Architectural Film Details.
   a. CM Response: BC-7 Flooring & Tile is responsible to install all Schluter Dilex & Finec as shown on A800 where it is incorporated in the Wall Film Application.
3. In BC-3 MCS notes G-L appear not relevant to this bid category. Please advise.
   a. CM Response: Notes G-L apply to all bid categories regardless of relevance or not. Some work may not be required, please refer to contract documents.
4. Please provide a specification for louvers.
   a. Response Per CSO's Attached Narrative: In 23 37 13 Diffusers, Registers, Grilles and Louvers – will have a minor revision in Addendum 02. Louvers for Self contained UV supplied by UV MFR

5. Please revise Electrical Schedules to reflect Architectural & Owner Room Numbers at LF Smith.
    a. Response Per CSO's Attached Narrative: See E601 and E611 for updated panel schedules.
6. Specification 27 15 00.23 is not included in the specification book. Please advise if this is forthcoming or should be removed?
    a. Response Per CSO's Attached Narrative: Section can be removed from the TOC.
7. Where is Panelboard LP-11 located?
    a. Response Per CSO's Attached Narrative: See drawing E213B
8. Drawing E212B Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?
    a. Response Per CSO's Attached Narrative: See addendum 2 drawings.
9. Drawing E212D Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?
    a. Response Per CSO's Attached Narrative: See addendum 2 drawings.
10. Drawing E212F Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?
    a. Response Per CSO's Attached Narrative: See addendum 2 drawings.
11. What is an F41 light fixture? E201B Ground Level
    a. Response Per CSO's Attached Narrative: See drawing E601 from add 2 documents.
12. What is an F10-06 light Fixture?
    a. Response Per CSO's Attached Narrative: See drawing E601 from add 2 documents.
13. What is an F10-04 light fixture?
    a. Response Per CSO's Attached Narrative: See drawing E601 from add 2 documents.
14. Please advise on panel/circuit information for room G210
    a. Response Per CSO's Attached Narrative: Addendum 2 documents.
15. Please advise on panel/circuit information for corridor G201
    a. Response Per CSO's Attached Narrative: Addendum 2 documents.
16. Please advise if DC1, FEC, and MB2 on sheet A901A should be provided? These are not specified to be furnished.
    a. Response Per CSO's Attached Narrative: See forthcoming ADD #2
17. Small group rooms appear to have a wall mounted fixture, but it is not specified on the finish plans. Please advise if any marker or tack board is required.
    a. Response Per CSO's Attached Narrative: ADD#2 - Wall mounted fixture shown are video boards – no tack or markerboards
18. Please confirm that VM-1 & VM-2 are not Owner provided & installed on A901A.
    a. Response Per CSO's Attached Narrative: See forthcoming ADD #2
19. 10 26 00 – Wall and Door Specification lists a product that is not available as described. As noted, they are asking for a 1.5" long leg with a retainer. The product they have specified is NOT available by any of the manufacturers listed in the Spec. Is a 2" leg and retainer acceptable?
    a. Response Per CSO's Attached Narrative: A 3" leg is preferred. This has been addressed in specification revisions for Addendum #2.
20. Is the contractor to provide and install HEXAGON ACRYCLIC SIGNAGE HOLDER as shown on A610 at Columbus East.
    a. Response Per CSO's Attached Narrative: Yes

21. MB-1 on Sheet A901A at LF smith is calling out for a salvaged markerboard on the equipment schedule, but note #10 calls out that these are new marker boards. Please advise if these are NEW or SALVAGED.
    a. Response Per CSO's Attached Narrative: See A901A revision to schedule in this addendum
22. Please advise on size of new MB-2 at LF smith on sheet A901A
    a. Response Per CSO's Attached Narrative: See A901A revision to schedule in this addendum
23. L. Frances Smith A409 thru A453 have a l0t of incomplete section and detail notes. Please advise if any additional detail will be provided.
    a. Response Per CSO's Attached Narrative: See updated sheets in this addendum
24. L. Frances Smith A505 Windon Schedules appear incomplete and or missing information. Please advise on material, finish, glass, ect.
    a. Response Per CSO's Attached Narrative: All windows to be HM (Hollow Metal) PT (Painted) G3 – glazing type
25. L. Frances Smith A600 Casework Counter Schedule appears incomplete. Please review and advise if there will be any updated information.
    a. Response Per CSO's Attached Narrative: Casework schedule for countertops were revised in this addendum to have only one scheduled countertop. All countertops in job are now CT1 which is a 24" deep countertop. Reference the A800 series plans for finish of countertops.
26. L. Frances Smith A602 missing the counter top notes. Please review and advise if revisions are forthcoming.
    a. Response Per CSO's Attached Narrative: Countertops in details 8 & 9 are existing to remain.
27. Trying to correlate the Finish Floor Elevation noted as 0'-0" on the Structural sheets back to the Civil drawings. In area G (and all foundation plans) it notes the Finish Floor is 0'-0" and then provides the dimension correlating back to 0'-0" for top of footing and top of slab. So in this instance at area G the T/Pier is +4'-1-1 ½" above finish floor, and slab is +4'-9 ½". That also doesn't appear to make sense if finish floor is 644.25 if that is to correlate to 0'-0", then the footers are above grade. Does 0'-0" then correlate to 639.46'? What Unit correlates to that Finish Floor Elevation?
    a. Response Per CSO's Attached Narrative: 0'-0" corresponds to USGS 639.46/639.50 and is the first-floor FFE in parts of Unit B and Unit C. The Unit G FFE is +4'-9½" which is +/- 644.25. The top of pier elevation of +4'-1½" is 8" below the Unit G FFE. The top of footing elevation in Unit G is typically -4'-10", which is 9'-7½" below the Unit G FFE and approximately matches the existing top of footing elevation. Existing grade in this area is roughly two to three feet above the top of footing. Please note that USGS elevations of the existing building components will need to be field-verified.
28. Specification 10 11 00 calls for tack boards to have a 2" powder coated frame. These are not available by any approved manufacturer. Please confirm a 1 ½" aluminum frame is acceptable.
    a. Response Per CSO's Attached Narrative: Clarification has been added in addendum #2 specification revisions.
29. Is the Bus Lot detention pond required within the base bid work?
    a. Response Per CSO's Attached Narrative: Yes, the roof drainage of building additions at Unit A and Unit G drain to the east side of the site. Per requirements of the City of Columbus, new impervious areas shall be treated for water quality and the runoff shall

be reduced from the site. Therefore, the detention would be needed in base bid. The detention, however, is sized to accommodate the Alternate bus parking lot in anticipation of those improvements.

30. Please advise if a new fire hydrant is required at the new bus drive.
    a. Response Per CSO's Attached Narrative: Yes, the existing fire protection vault near Waycross Drive contains a post indicator valve (PIV) and Fire Department Connection (FDC), which should have a hydrant within a 100-foot vicinity. The nearest existing fire hydrant is across the street, exceeding 100 feet distance from the vault. In anticipation of the bus parking lot (Alternate), a fire engine is likely to park next to the fire vault within the bus lot drive aisle for accessing the FDC / PIV. The proposed hydrant will be in close proximity to this location.
    Additionally, a second fire hydrant was requested east of the school by the Fire Department in anticipation of the bus parking lot construction (Alternate).

MCS Clarifications

31. BC-1 General Trades
    a. REVISED – "Responsible for all specialties per schedule on A901A" This has been revised to read as "Responsible for all specialties per schedule on A901A as Contractor Supplied, Contractor Installed at LF Smith."

32. BC-3 Concrete
    a. ADDED Specification 03 01 30 – Maintenance of Cast-In-Place Concrete
    b. ADDED Specification 03 35 00 – Concrete Surface Treatment

33. BC-5 Casework
    a. ADDED Specification 12 35 57 – Plastic-Laminate-Clad Laboratory Casework

34. BC-7 Flooring
    a. ADDED – "BC-7 Flooring & Tile is responsible to install all Schluter Dilex & Finec as shown on A800 where it is incorporated in the Wall Film Application. "

35. BC-10 HVAC & Plumbing
    a. ADDED – "Responsible to provide and install Eye Wash(s) at Columbus East as called out on A902."

36. BC-11 Electrical & Technology
    a. Specification 27 15 00.23 is hereby removed from the bid documents per CSO response within Addendum #2.

37. BC-12 Painting
    a. ADDED – "Responsible to provide and install Rosco paint where required as called out in specification 11 62 00 ENTERTAINMENT EQUIPMENT."

New / Revised Specifications

38. Refer to Addendum #2 Document Attached from CSO noting changes:
    a. 03 01 30 – Maintenance of Cast-In-Place Concrete
    b. 03 35 00 – Concrete Surface Treatment
    c. 08 71 00 – Door Hardware
    d. 12 35 57 – Plastic-Laminate-Clad Laboratory Casework

Updated Drawings

1. Refer to Addendum #2 Document Attached from CSO noting changes:
    a. **L. FRANCES SMITH ELEMENTARY:**
        i. C000, C101, C501, S200B, S200C, S200G, S201B, S202B, S202C, S202D, S202G, S203B, S203C, S203D, S204B, S405, S602, S701, S702, S704, A110, A111, A112, A113, A114, A201C, A202B, A202C, A211C, A212B, A406, A408, A409, A410, A411, A421, A422, A423, A424, A450, A451, A452, A453, A504, A901A, A902B, FP201B, P101B, P101C, P101D, P101G, P200D, P201B, P201C, P201D, P201F, P202B, P202F, P202G, P203B, P220F, P501, P601, PD101B, PD200D, PD201F, PD202F, PD220F, M201A, M201C, M201D, M201E, M202D, M211C, M211D, M212D, M220C, M220D, M401, M601, M602, ED201B, ED201C, ED201D, ED202C, ED202D, ED202F, ED202G, ED203B, E100, E201D, E202F, E202G, E203B, E211A, E211B, E211C, E211D, E211E, E212B, E212C, E212D, E212E, E212F, E212G, E213B, E601, E611, TD000, T100, T100D, T201B, T300, T400, T401, T402, T403, T500
    b. **Columbus East**
        i. E212, E601, M201, M601, M701

DOCUMENT 004323 - ALTERNATES FORM

Project: Bartholomew Consolidated School Corporation Project BP #1 LF Smith & Columbus East Renovations

L Francis Smith Elementary: 4505 Waycross Dr, Columbus, IN 47203

Columbus East High School: 230 S Marr Rd, Columbus, IN 47201

Owner: Bartholomew Consolidated School Corporation
Architect: CSO Architects
Construction Manager: Maxwell Construction Company

Bid Submitted By:_____

Bid Category: No._____ Description_____

DESCRIPTION

A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

D. The Bidder shall be responsible for determining from the Contract Documents the effects of each alternate on the Contract Time and the Contract Sum.

E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 90 days of the Notice of Award unless otherwise indicated in the Contract Documents.

F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

SCHEDULE OF ALTERNATES AS FOLLOWS:

Columbus East High School

Alternate No. 1 – Upper Casework

Responsible Bid Categories: BC-5 Casework

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to provide one row up upper casework in C4 lab locations.
- Alternate #1 to include ADD to provide and install a second row of upper casework in C4 lab locations as indicated on drawing A601.

Alternate No. 2 – Columbus East High School HVAC Controls – Trane

Responsible Bid Categories: BC-10 Plumbing & HVAC

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to provide controls wiring & devices in accordance with drawings and specifications. Controls will not be by Trane.
- Alternate #2 to include ADD or DEDUCT to contract sum for HVAC controls provided by Trane to integrate into the school's existing system, with requirements specified in Section 23 09 00 Instrumentation and Controls for HVAC, and as shown on Plans. Amount represents cost of all materials and labor.

L. Francis Smith Elementary School

Alternate No. 3 – Bus Loop

Responsible Bid Categories: BC – 2 Excavation & Paving, BC-3 Concrete, BC-11 Electrical / Technology.

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to modify east side of site with new sidewalks connecting to existing north/south. Refer to civil and landscape sheets for scope.
- Alternate #3 to include ADD to modify east side of site with new bus loop, sidewalks, and storm work. Refer to sheets C303, C305, C403, C903, L010a, L100a, L200a, L400a, and E100, and T001 for scope.

Alternate No. 4 – Cafeteria/Custodial Office Renovation

Responsible Bid Categories: BC-1 General Trades, BC-6 Framing, Drywall, Ceilings, BC-7 Flooring& Tile, BC-8 Windows & Glazing, BC-9 Fire Suppression, BC-10 Plumbing, Heating, Ventilation, and Air Conditioning, BC-11 Electrical, BC-12 Painting.

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid is that existing custodial office in Unit F is to remain. Existing restrooms to receive no work. Cafeteria will receive electrical work as shown, but finishes are existing to remain.
- Alternate #4 to include ADD to modify the shower space in lower-level Unit F to create a new custodial office. Refer to sheets AD201F, A201F, and related mechanical, electrical, and plumbing drawings for these rooms. Rework Cafeteria F202 to create a small Office F203 and Storage F204, add new window, add two new doors off corridor, provide new flooring for all spaces. Refer to sheets AD202F, A202F, and related mechanical, electrical, and plumbing drawings for these rooms.

Alternate No. 5 – New Additions Roofing – Carlisle

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to include Sika Sarnfil as roofing manufacturer in accordance with division 7 specifications.
- Alternate #5 to include a DEDUCT for Carlisle as roofing manufacturer in accordance with Division 7 specifications.

Alternate No. 5a – New Additions Roofing – Fibertite

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to include Sika Sarnfil as roofing manufacturer in accordance with division 7 specifications.
- Alternate #5a to include a DEDUCT for Fibertite as roofing manufacturer in accordance with Division 7 specifications.

Alternate No. 5b – New Additions Roofing – Any Manufacturer

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

Manufacturer:_____

- Base bid to include Sika Sarnfil as roofing manufacturer in accordance with division 7 specifications.
- Alternate #5b to include ADD for any roofing manufacturer with a .60 mil reinforced membrane, 20 year warranty, and associated roofing assembly in accordance with the drawings.

Alternate No. 6 – Re-Roofing – Sika Sarnafil

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to include no re-roofing work on units E, F, G unless otherwise required by new additions.
- Alternate #6 to include an ADD for Sika Sarnafil as roofing manufacturer for the Re-Roof work required at Unit E, F, and G in accordance with Division 7 specifications.

Alternate No. 6a – Re-Roofing – Carlisle

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to include no re-roofing work on units E, F, G unless otherwise required by new additions.
- Alternate #6a to include an ADD for Carlisle as roofing manufacturer for the Re-Roof work required at Unit E, F, and G in accordance with Division 7 specifications.

Alternate No. 6b – Re-Roofing – Fibertite

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to include no re-roofing work on units E, F, G unless otherwise required by new additions.
- Alternate #6b to include an ADD for Fibertite as roofing manufacturer for the Re-Roof work required at Unit E, F, and G in accordance with Division 7 specifications.

Alternate No. 6c – New Additions Roofing – Any Manufacturer

Responsible Bid Categories: BC-13 Roofing

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

Manufacturer:_____

- Base bid to include no re-roofing work on units E, F, G unless otherwise required by new additions.
- Alternate #6c to include ADD for any roofing manufacturer with a .60 mil reinforced membrane, 20 year warranty for the Re-Roof work required at Unit E, F, and G in accordance with the drawings.

Alternate No. 7 – Unit F Corridor Finish Update

Responsible Bid Categories: BC-1 General Trades

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid is to Replace existing flooring. Existing visual display units to remain on walls.
- Alternate #6 to include ADD to Demolish existing visual display units outside of Cafeteria F202. Patch and repair concrete walls to receive ten (10) new tack boards relocated from existing classrooms.

Alternate No. 8 – L. Frances Smith Elementary School HVAC Controls – Jackson Systems

Responsible Bid Categories: BC-10 Plumbing & HVAC

ADD_____ DEDUCT_____ NO CHANGE_____ NOT APPLICABLE_____

_____ Dollars ($_____)
(Written Amount) (Numerical)

- Base bid to provide controls wiring & devices in accordance with drawings and specifications. Controls will not be by Jackson Systems.
- Alternate #7 to include ADD or DEDUCT to contract sum for HVAC controls provided by Jackson Systems to integrate into the school's existing system, with requirements specified in Section 23 09 00 Instrumentation and Controls for HVAC, and as shown on Plans. Amount represents cost of all materials and labor.

SUBMISSION OF BID SUPPLEMENT

Respectfully submitted this ____ day of _____, 2025

Submitted By:_____(Insert name of bidding firm or corporation)

Authorized Signature:_____(Handwritten signature)

Signed By:_____(Type or print name)

Title:_____(Owner/Partner/President/Vice President)

END OF DOCUMENT 004323

ADDENDUM

CSO
ARCHITECTURE · INTERIOR DESIGN

ADDENDUM NO: 2

PROJECT: BCSC L. Frances Smith Elementary School & Columbus East High School

PROJECT NO: 2024023 & 2024024 DATE: 02/05/2025 BY: Emily Newton

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. This Addendum includes:

Addendum Pages: ADD2-1 – ADD2-26

Attached Specifications:
03 01 30 – Maintenance of Cast-In-Place Concrete
03 35 00 – Concrete Surface Treatment
08 71 00 – Door Hardware
12 35 57 – Plastic-Laminate-Clad Laboratory Casework

Attached Drawing Sheets:

L. FRANCES SMITH ELEMENTARY:

C000, C101, C501, S200B, S200C, S200G, S201B, S202B, S202C, S202D, S202G, S203B, S203C, S203D, S204B, S405, S602, S701, S702, S704, A110, A111, A112, A113, A114, A201C, A202B, A202C, A211C, A212B, A406, A408, A409, A410, A411, A421, A422, A423, A424, A450, A451, A452, A453, A504, A901A, A902B, FP201B, P101B, P101C, P101D, P101G, P200D, P201B, P201C, P201D, P201F, P202B, P202F, P202G, P203B, P220F, P501, P601, PD101B, PD200D, PD201F, PD202F, PD220F, M201A, M201C, M201D, M201E, M202D, M211C, M211D, M212D, M220C, M220D, M401, M601, M602, ED201B, ED201C, ED201D, ED202C, ED202D, ED202F, ED202G, ED203B, E100, E201D, E202F, E202G, E203B, E211A, E211B, E211C, E211D, E211E, E212B, E212C, E212D, E212E, E212F, E212G, E213B, E601, E611, TD000, T100, T100D, T201B, T300, T400, T401, T402, T403, T500,

COLUMBUS EAST:

E212, E601, M201, M601, M701

PART 0 - GENERAL INFORMATION

0.1 NOT USED

PART 1 - BIDDING REQUIREMENTS

1.1 NOT USED

8831 Keystone Crossing, Indianapolis, IN 46240 | 317.848.7800 | csoinc.net

PART 2 - SPECIFICATIONS

2.1 00 00 10 – TABLE OF CONTENTS

A. REMOVE section 27 15 00.23 Audio Video Communications Horizontal Cabling from DIVISION 27 - COMMUNICATIONS

2.2 03 01 30 – MAINTENANCE OF CAST-IN-PLACE CONCRETE

A. ISSUE new specification section in its entirety.

2.3 03 35 00 – CONCRETE SURFACE TREATMENT

A. ISSUE new specification section in its entirety.

2.4 06 40 00 – INTERIOR ARCHITECTURAL WOODWORK

A. DELETE section 2.09 WALL MOUNTED WOOD MURALS in its entirety.

2.5 07 54 19 – POLYVINYL-CHLORIDE (PVC) ROOFING

A. ADD approved manufacturer to 2.01.A

c. Johns Manville, A Berkshire Hathaway Company.

2.6 08 31 13 – ACCESS DOORS AND FRAMES

A. REVISE section 2.02 to read as follows:

2.02 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

A. Flush Access Doors with Exposed Flanges (RESTROOM ACCESS DOORS):

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   i. ACUDOR Products, Inc
   ii. Babcock-Davis
   iii. JL Industries; Activar Construction Products Group, Inc.
   iv. Nystrom, Inc.

2. Description: Face of door flush with frame, with exposed flange and concealed hinge.
3. Optional Features: Piano hinges.
4. Locations: Wall, restrooms with wall tile.
5. Door Size: As Indicated on Drawings.
6. Stainless Steel Sheet for Door: Nominal 0.062 inch, 16 gage, ASTM A480/A480M No. 4 finish.
7. Frame Material: Same material, thickness, and finish as door.
8. Latch and Lock: Cam latch, key operated. Coordinate keying with corporation master lock.

B. Flush Access Doors with Exposed Flanges (WALLS OTHER THAN RESTROOMS)

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   i. ACUDOR Products, Inc
   ii. Babcock-Davis
   iii. JL Industries; Activar Construction Products Group, Inc.
   iv. Nystrom, Inc.

2. Description: Face of door flush with frame, with exposed flange and concealed hinge.
3. Optional Features: Piano hinges.
4. Locations: Wall, restrooms without wall tile.
5. Door Size: As Indicated on Drawings.
6. Factory Prime for field painting.
7. Frame Material: Same material, thickness, and finish as door.
8. Latch and Lock: Cam latch, key operated. Coordinate keying with corporation master lock.

C. Flush Access Doors with Exposed Flanges (CEILINGS)

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   i. ACUDOR Products, Inc
   ii. Babcock-Davis
   iii. JL Industries; Activar Construction Products Group, Inc.
   iv. Nystrom, Inc.

2. Description: Face of door flush with frame, with exposed flange and concealed hinge.
3. Optional Features: Piano hinges.
4. Locations: Ceilings
5. Door Size: As Indicated on Drawings.
6. Factory Prime for field painting.
7. Frame Material: Same material, thickness, and finish as door.
8. Latch and Lock: Screwdriver latch.

2.7 08 71 00 – DOOR HARDWARE

A. REVISE specification to include door hardware for L. Frances Smith Elementary School.

2.8 09 63 23 – LUXURY VINYL FLOORING (LVT)

A. ADD section 2.03C as follows:

"C. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints."

2.9 10 11 00 – VISUAL DISPLAY UNITS

A. REVISE 2.03-A.1 as follows:

1. Basis of Design: Claridge, Series 8

B. REVISE 2.03-A.3 as follows:

3. Frame: 1 inch wide by 5/16 inch thick aluminum

C. REVISE 2.04-A.4 as follows:

4. Frame: 1 inch wide by 5/16 inch thick aluminum

2.10 10 26 00 – WALL AND DOOR PROTECTION

A. REVISE 2.02-A.2.a and 2.02-A.2.b as follows:

a. Profile: Nominal 3 inch long leg and 1/4-inch (6-mm) corner radius.

b. Height: 10 foot cut to various heights in factory based on approved shop drawings from field verification.

0.2 12 35 57 – PLASTIC-LAMINATE-CLAD LABORATORY CASEWORK

A. ISSUE new specification section in its entirety.

0.3 23 37 13 – DIFFUSERS, REGISTERS, GRILLES, AND LOUVERS

A. CHANGE 2.4.A TO: 3" Extruded Aluminum Louvers, vertical blade, 50% FA, like Greenheck EVH-302

B. CHANGE 2.4.A.1 TO: See size of louver on plans

0.5 28 23 00 – VIDEO SECURITY

A. Replace Paragraph 2.2-G in its entirety with the following:

G. Acceptable Manufacturer and model:

1. Exacq Technologies X-Series IP 2U (No Exceptions)

PART 1 - L. FRANCES SMITH ELEMENTARY DRAWINGS

CIVIL

1.1 C000 – TITLE SHEET

A. Modified Drawing Index to identify the revised sheets & dates under this Addendum (clouded)

1.2 C101– DEMOLITION PLAN - NORTH

A. Added Demolition Key note #21 – exterior fence removal in between Unit A and Unit B

B. Modified extents of curb demolition limits at Waycross Drive

1.3 C501 – UTILITY PLAN - NORTH

A. Modified location of new proposed fire hydrant northeast of the building by Waycross Drive

B. Added additional new fire hydrant on east side of building (per Fire Department) in anticipation of Bus Parking Lot. The hydrant is included as base bid for easier install of tee fitting with the new fire protection line to Unit A as identified by Fire Protection plans

C. Modified the location of the new fire protection line to Unit A as identified by Fire Protection plans

STRUCTURAL

1.4 S200B – FOUNDATION PLAN – UNIT B

A. Add section callout 11/S602 as shown.

1.5 S200C – FOUNDATION PLAN – UNIT C

A. Add section callouts 8 & 9/S602 as shown.

1.6 S200G – FOUNDATION PLAN – UNIT G

A. Add note "DOWEL TO EX. CONC., TYP." where new cast-in-place concrete walls abut existing CIP walls.

1.7 S201B – FIRST FLOOR SLAB PLAN – UNIT B

A. Add section callout 11/S602 as shown.

1.8 S202B – SECOND FLOOR & LOW ROOF FRAMING PLAN – UNIT B

A. Add section callout 18/S701 SIM as shown.

B. Add schematic representation of slab opening frame for large ductwork and "C6 FRAME" note as shown.

1.9 S202C – SECOND FLOOR FRAMING PLAN – UNIT C

A. At existing plumbing chase openings to be infilled, add notation and 32/S702 SIM callouts as shown.

1.10 S202D – LOW ROOF FRAMING PLAN – UNIT D

A. Add section callouts 9 through 15/S701 as shown.

B. At existing plumbing chase openings to be infilled, add notation and 32/S702 SIM callouts as shown.

C. Add existing structure labels and dimensions as shown.

1.11 S202G – SECOND FLOOR SLAB PLAN – UNIT G

A. Add section callout 10/S602 as shown.

1.12 S203B – INTERMEDIATE ROOF & GIRT FRAMING PLAN – UNIT B

A. Add section callouts 18/S701, 18/S701 SIM, 19/S701, and 9/S704 as shown.

B. Add existing structure labels as shown.

C. Add new mechanical openings and associated framing & notation as shown.

1.13 S203C – ROOF FRAMING PLAN – UNIT C

A. Add section callout 10/S704 as shown.

1.14 S203D – UPPER ROOF FRAMING PLAN – UNIT D

A. Add section callouts 16 & 17/S701 as shown.

1.15 S204B – ROOF FRAMING PLAN – UNIT B

A. Add section callout 9/S704 SIM as shown.

B. Add existing structure labels as shown.

C. Add new mechanical openings and associated framing & notation as shown.

1.16 S405 – TYPICAL DETAILS

A. Add detail 13/S405 EX. 7½" ROOF DECK REINF. DETAIL.

1.17 S602 – FOUNDATION SECTIONS AND DETAILS

A. Add sections 8 through 11/S602.

1.18 S701 – FRAMING SECTIONS AND DETAILS

A. Add sections 9 through 17/S701.

B. Add 18/S701 GIRT CONN. DETAIL and 19/S701 GIRT/END POST DETAIL.

1.19 S702 – FRAMING SECTIONS AND DETAILS

A. Revise sections 18 & 20/S702 as shown.

1.20 S704 – FRAMING SECTIONS AND DETAILS

A. Revise section 3/S704 as shown.

B. Add sections 9 & 10/S704.

ARCHITECTURAL

1.21 AD101 – OVERALL BASEMENT DEMOLITION FLOOR PLAN through AD104 – OVERALL THIRD FLOOR DEMOLITION PLAN

A. ADD the following note to the GENERAL DEMOLITION NOTES:

"T. ROOM NAMES & NUMBERS (FOR EXAMPLE 'CLASSROOM 222') ON AD100 SERIES DEMOLITION PLANS AND AD200 SERIES DEMOLITION PLANS ARE ACTUAL CURRENT EXISTING ROOM NAMES AND NUMBERS - PROVIDED FOR CLARITY AND ORIENTATION DURING DEMOLITION / CONSTRUCTION.

"U. EXTERIOR DOOR NUMBERS (FOR EXAMPLE 'DOOR # 5') ON AD100 SERIES DEMOLITION PLANS AND AD200 SERIES DEMOLITION PLANS ARE ACTUAL CURRENT EXISTING DOOR NUMBERS - PROVIDED FOR CLARITY AND ORIENTATION DURING DEMOLITION / CONSTRUCTION.

"V. THESE GENERAL DEMOLITION NOTES APPLY TO ALL AD SERIES DEMOLITION SHEETS. SEE INDIVIDUAL SHEETS FOR KEYED DEMOLITION NOTES."

1.22 AD200A – LOWER LEVEL DEMOLITION PLAN – UNIT A through AD203B – UPPER LEVEL DEMOLITION PLAN – UNIT B

A. At Keyed Demolition Note #32, REVISE 12' to read "12" (12 inches)".

B. REVISE Keyed Demolition Note #22 to read "SEE ELECTRICAL DRAWINGS FOR NEW, EXISTING, DEMOLISHED, AND REPLACED ELECTRICAL ITEMS INCLUDING CONDUIT RUNS IN WALL AND WIRE MOLD, LIGHT FIXTURES AND DEVICES."

C. REVISE Keyed Demolition Note #23 to read "SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURES TO REMAIN OR TO BE REPLACED WITH NEW FIXTURES. SEE ELECTRICAL DRAWINGS FOR FULL EXTENT OF ELECTRICAL WORK."

1.23 AD200D – LOWER LEVEL DEMOLITION PLAN – UNIT D

A. At Existing TOILET 306 – DELETE Keyed Demolition Notes 11 and 13. No work in this room.

1.24 AD201A – GROUND LEVEL DEMOLITION PLAN – UNIT A

A. At Existing Exterior Doors #7 and #9, REVISE Keyed Demolition Note to refer to '7' in lieu of '8'. (Entire frame assembly must be removed).

B. At Existing door from Corridor to Custodial 228, ADD Keyed Demolition Note '8'.

C. At new opening in wall between Custodial 228 and adjacent Toilet, ADD Keyed Demolition Note '6'.
Additionally, ADD note reading "New Opening to be 3'-4" W X 6'-8" H. Neatly finish all cut edges."

1.25 AD201C – GROUND LEVEL DEMOLITION PLAN – UNIT C

A. At Guidance 116, REVISE Keyed Demolition Note in northwest corner of room at Mechanical Unit to read '31' in lieu of '35'.

B. At Custodial 113B, ADD Keyed Demolition Note '11' to indicate removal of existing mop sink in this room.

C. At North exterior wall of Administration (Rooms 116 through 118A), ADD Keyed Demolition Note '31' at fin tube radiation along wall.

1.26 AD201D – GROUND LEVEL DEMOLITION PLAN – UNIT D

A. At door between Classroom 315 and Classroom 317, REVISE Keyed Demolition Note to read '7' in lieu of '8'. Entire frame assembly to be removed.

B. At North exterior wall of Classroom 311, ADD the following note:
"REMOVE EXISTING TACKSURFACE AND MARKERBOARD. PATCH EXISTING GYPSUM BOARD OR PROVIDE NEW AS REQUIRED AND PREPARE FOR NEW FINISH."

1.27 AD201E – GROUND LEVEL DEMOLITION PLAN – UNIT E

A. At all RAMPS, add Keyed Demolition Notes '16' and '23'.

1.28 AD201F – GROUND LEVEL DEMOLITION PLAN – UNIT F (as reissued in Addendum #1)

A. At Storage 518, DELETE Keyed Demolition Notes '5', '16' and '31'.

B. At Office 513, DELETE Keyed Demolition Note '16'.

C. At Gymnasium 511, ADD Keyed Demolition Note '62' at exterior door.

1.29 AD202B – SECOND LEVEL DEMOLITION PLAN – UNIT B

A. At Node (@ 3'-4"), DELETE Keyed Demolition Note '68'.

B. At Node (@ 6'-8"), ADD Keyed Demolition Note '31' at East Wall Mechanical Unit indicated to be removed.

C. At Node (@ 10'-0"), ADD Keyed Demolition Note '31' at South Wall Mechanical Unit indicated to be removed.

1.30 AD202D – SECOND LEVEL DEMOLITION PLAN – UNIT D

A. At Corridor, REMOVE Keyed Demolition Note '67'.

B. DELETE Keyed Demolition Notes at South end Stair, Elec, Elev and Passage rooms.

1.31 AD202F – SECOND LEVEL DEMOLITION PLAN – UNIT F

A. At Custodial 524, add Keyed Demolition Notes '33' and '62'.

1.32 AD202G – SECOND LEVEL DEMOLITION PLAN - UNIT G

A. REVISE Keyed Demolition Notes which read '34' to read '62' (at doors)

B. REVISE Keyed Demolition Notes which read '19' to read '65' (at corridor Tackboards)

C. At Classroom 423 and 424, ADD Keyed Demolition Note '11' at casework sinks.

1.33 A110 – OVERALL FIRST FLOOR LIFE SAFETY PLAN

A. REISSUE sheet in its entirety.

1.34 A111 – OVERALL SECOND & THIRD FLOOR LIFE SAFETY PLAN

A. REISSUE sheet in its entirety.

1.35 A112 – ENLARGED FIRST FLOOR LIFE SAFETY PLAN

A. REISSUE sheet in its entirety.

1.36 A113 – ENLARGED SECOND & THIRD FLOOR LIFE SAFETY PLAN

A. REISSUE sheet in its entirety.

1.37 A114 – LIFE SAFETY PLAN & BUILDING SECTIONS DIAGRAMS

A. REISSUE sheet in its entirety.

1.38 A200A – LOWER LEVEL FLOOR PLAN - UNIT A through A203B – UPPER LEVEL FLOOR PLAN - UNIT B

A. REVISE Keyed Plan Note #29 to read, "CONCRETE BLOCK OR CAST IN PLACE CONCRETE INFILL AT EXISTING OPENING TO MATCH ADJACENT WALL CONSTRUCTION. SEE DETAILS FOR MORE INFORMATION."

1.39 A201C – GROUND LEVEL FLOOR PLAN – UNIT C

A. ADD W2* walls to SPEECH – C124 as dimensioned on plan

B. REVISE callout 1A423 to read as 3A421 as shown on sheet.

1.40 A202B – SECOND LEVEL FLOOR PLAN – UNIT B

A. REISSUE sheet in its entirety.

B. At Workroom B204, ADD duct chase and move location of casework as shown.

C. REVISE callout 2A423 to read as 3A424 as shown on sheet.

1.41 A202C – SECOND LEVEL FLOOR PLAN – UNIT C

A. REVISE callout 6A423 to read as 14A422 as shown on sheet.

1.42 A202F – SECOND LEVEL FLOOR PLAN – UNIT F

A. ADD frame tag F42 to Kalwall located on the east side of the gymnasium.

1.43 A211C – GROUND LEVEL REFLECTED CEILING PLAN – UNIT C

A. ADD bulkheads as indicated on plans

B. ADD ceiling plan note 23: "NEW BULKHEAD. SEE DETAIL 2/A211C." to legend and ceiling plan as indicated on sheet.

C. ADD detail 2 to sheet

D. REVISED ceiling height in SPEECH – C124 and added full height walls

1.44 A212B – SECOND LEVEL REFLECTED CEILING PLAN – UNIT B

A. REVISE ceiling height tag in room B205 to read +10'-4" as shown on sheet.

B. REVISE ceiling height tag in room B206 to read +10'-4" as shown on sheet.

C. ADD ceiling to room B207

D. ADD ceiling height tag +10'-4" and ceiling type tag CL1 to ceiling in room B207.

1.45 ALL 400 SERIES SHEETS

A. REVISE 05 73 00 – A to read "48" HIGH GLASS AND STAINLESS STEEL RAILING SYSTEM"

1.46 A406 – WALL SECTIONS

A. REISSUE sheet in its entirety.

1.47 A408 – WALL SECTIONS

A. REISSUE sheet in its entirety.

1.48 A409 – WALL SECTIONS

A. REISSUE sheet in its entirety.

1.49 A410 – WALL SECTIONS

A. REISSUE sheet in its entirety.

1.50 A411 – WALL SECTIONS

A. REISSUE sheet in its entirety.

1.51 A421 – PLAN DETAILS

A. REISSUE sheet in its entirety.

1.52 A422 – PLAN DETAILS

A. REISSUE sheet in its entirety.

1.53 A423 – PLAN DETAILS

A. REISSUE sheet in its entirety.

1.54 A424 – PLAN DETAILS

A. REISSUE sheet in its entirety.

1.55 A450 – VERTICAL CIRCULATION PLANS, SECTIONS, AND DETAILS

A. REISSUE sheet in its entirety

1.56 A451 – VERTICAL CIRCULATION PLANS, SECTIONS, AND DETAILS

A. REISSUE sheet in its entirety.

1.57 A452 – VERTICAL CIRCUATION PLANS, SECTIONS, AND DETAILS

A. REISSUE sheet in its entirety

1.58 A453 - VERTICAL CIRCUATION PLANS, SECTIONS, AND DETAILS

A. REISSUE sheet in its entirety

1.59 ALL DOOR/FRAME/WINDOW SHEETS

A. ADD G7- FIBERGLASS SANDWICH PANEL ASSEMBLY to Glass Schedule

1.60 A503 – FRAME ELEVATIONS

A. REVISE text note "SEE 12/A412" to read "SEE 12/A422."

1.61 A504 – FRAME ELEVATIONS

A. ADD frame elevation F42 as shown on sheet.

1.62 A505 – WINDOW SCHEDULE AND ELEVATIONS

A. REVISE WINDOW SCHEDULES to clarify ALL WINDOWS to be painted hollow metal frames with G3 glazing. No UL, STC, or REMARKS

1.63 A600 – CASEWORK SCHEDULE

A. REVISE CASEWORK SCHEDULE – COUNTER to be one line to read as follows:

CT1 | 24" DEEP COUNTERTOP | 12 32 16 | STEVENS INDUSTRIES | - | - | SEE 800 SERIES FOR FINISH

1.64 A601 – CASEWORK ELEVATIONS

A. At Elevation 28/A601, add Filler Panel 'FP' indications at left hand side of casework.

1.65 A901A – GROUND LEVEL EQUIPMENT PLAN – UNIT A

A. REISSUE sheet in its entirety.

B. REVISE 'NEW SPECIALTY EQUIPMENT SCHEDULE' as indicated on sheet

1.66 A902B – SECOND LEVEL EQUIPMENT PLAN – UNIT B

A. REVISE sheet in its entirety.

B. At Workroom B204, Add duct chase and move location of casework as shown.

C. At Small Classroom B205, Add room name and number, Revise location of Unit Ventilator tag '3' and Add VM1 Flat Panel Monitor as indicated.

D. At Small Group Room B206, Add room name and number as indicated.

E. At Small Classroom B207, Add room name and number, Revise location of Unit Ventilator tag '3' and Add VM1 Flat Panel Monitor as indicated.

1.67 A901C – GROUND LEVEL EQUIPMENT PLAN – UNIT C

A. REMOVE DC1 from CLINIC – C101

FIRE PROTECTION

1.68 FP201B – GROUND LEVEL – UNIT B – FIRE PROTECTION

A. CLARIFIED PIPE SIZES

PLUMBING

1.69 P101B – UNDERSLAB PLAN – UNIT B – PLUMBING

A. CHANGES MADE TO THE UNDERGROUND PLUMBING.

1.70 P101C – UNDERSLAB PLAN– UNIT C – PLUMBING

A. CHANGES MADE TO THE UNDERGROUND PLUMBING.

1.71 P101D – UNDERSLAB PLAN – UNIT D – PLUMBING

A. CHANGES MADE TO THE UNDERGROUND PLUMBING.

1.72 P101G – UNDERSLAB PLAN – UNIT D – PLUMBING

A. CHANGES MADE TO THE UNDERGROUND PLUMBING.

1.73 P200D – UNDERSLAB PLAN – UNIT D – PLUMBING

A. CHANGES MADE TO THE UNDERGROUND PLUMBING.

1.74 P201B – GROUND LEVEL – UNIT B – PLUMBING

A. CHANGES MADE TO WASTE, VENT AND STORM PIPING AND FIXTURE NUMBERS.

1.75 P201C – GROUND LEVEL – UNIT C – PLUMBING

A. CHANGES MADE TO WASTE PIPING AND FIXTURE NUMBERS.

1.76 P201D – GROUND LEVEL – UNIT D – PLUMBING

A. CHANGES MADE TO WASTE PIPING AND FIXTURE NUMBERS.

1.77 P201F – GROUND LEVEL – UNIT F – PLUMBING

A. ADDED PIPING FOR MOP SINK.

1.78 P202B – SECOND LEVEL – UNIT B – PLUMBING

A. CHANGES TO WASTE, VENT AND STORM PIPING.

1.79 P202F – SECOND LEVEL – UNIT F – PLUMBING

A. ADDED MOP SINK. ADDED WATER, WASTE AND VENT PIPING.

1.80 P202G – SECOND LEVEL – UNIT G – PLUMBING

A. CHANGES MADE TO WASTE PIPING AND FIXTURE NUMBERS.

1.81 P203B – UPPER LEVEL – UNIT B – PLUMBING

A. ADJUST ROOF DRAIN ROUTING

B. ADD FLOOR DRAIN TO MECHANICAL ROOM

1.82 P220F – ROOF PLAN – UNIT F– PLUMBING

A. MOVE ROOF DRAIN.

1.83 P501 – ISOMETRICS – PLUMBING

A. CHANGES MADE TO PIPING DIAGRAMS.

1.84 P601 – SCHEDULES – PLUMBING

A. CHANGES MADE TO PLUMBING FIXTURE SCHEDULE.

1.85 PD101B – UNDERSLAB PLAN – UNIT B – PLUMBING DEMOLITION

A. ADDED SAWING CUTTING AND PATCHING.

1.86 PD201F – GROUND LEVEL – UNIT F – PLUMBING DEMOLITION

A. ADDED DEMOLITION OF WATER WASTE AND VENT PIPING FROM MOP SERVICE SINK

1.87 PD200D – GROUND LEVEL – UNIT D – PLUMBING DEMOLITION

A. REVISED PIPING.

1.88 PD202F – SECOND LEVEL – UNIT F – PLUMBING DEMOLITION

A. DEMOLITION OF WATER, WASTE AND VENT AND MOP SERVICE SINK.

1.89 PD220F - UNIT F – PLUMBING DEMOLITION

A. MOVED ROOF DRAINS

MECHANICAL

1.90 M201A – GROUND LEVEL – UNIT A – AIR DISTRIBUTION

A. DELETE GENERAL NOTE #23.

B. NEW PLAN NOTE #3: ROOF OPENING 12″/12″ MAXIMUM. TRANSITION DUCTWORK AS REQUIRED.

C. PLAN NOTE #3 APPLIES TO ALL ROOF MOUNTED EXHAUST FANS ON THIS SHEET.

D. NEW PLAN NOTE #4: EXTEND FLEXIBLE DUCTWORK TO DIFFUSER LOCATIONS AS REQUIRED.

E. REPLACE PLAN NOTE 25 IN EACH CLASSROOM WITH PLAN NOTE 4.

1.91 M201C – GROUND LEVEL – UNIT C – AIR DISTRIBUTION

A. ADJUST ROUTE OF DUCTWORK AT COLUMN 24 AT PRINCIPAL OFFICE.

B. 36″/24″ LOUVER FOR VUV-C130.

1.92 M201D– GROUND LEVEL – UNIT D– AIR DISTRIBUTION

A. CHANGE OUTDOOR AIR ROUTE FOR VUV IN MAKERSPACE D102.

B. NEW UV MFR LOUVER FOR UV-F118.

C. CONNECT OUTDOOR AIR DUCT OF NORTH VUV TO SOUTH VUV IN STEM LAB D110.

D. EXHAUST DUCT WORK FROM GRILLES TO FANS ON ROOF.

1.93 M201E – GROUND AND SECOND LEVEL – UNIT E - MECHANICAL

A. NEW UV MFR LOUVER FOR EACH UV-E#.

1.94 M202D – SECOND LEVEL – UNIT D – AIR DISTRIBUTION

A. OUTDOOR AIR ROUTE FOR VUV IN MAKERSPACE D102.

B. EXHAUST DUCTWORK FROM BELOW, FROM GRILLES ON THIS LEVEL, AND UP TO ROOF.

1.95 M211C – GROUND LEVEL – UNIT C - HYDRONICS

A. PIPE SIZES FOR VUV-C130.

B. PIPE FOR CUH-C1

C. REMOVE FTR ALONG NORTH OFFICES

D. CONDENSATE DRAIN FOR FCUS

1.96 M211D – GROUND LEVEL – UNIT D - HYDRONICS

A. DELETE CHILLED WATER AND RESIZE HEATING WATER TO UV-F118.

1.97 M212D – SECOND LEVEL – UNIT D - HYDRONICS

A. SHOW NEW THERMOSTAT LOCATION FOR EACH EXISTING VUV.

1.98 M220C – ROOF PLAN – UNIT C - MECHANICAL

A. NEW PLAN NOTE #2: ROOF OPENING 12″/12″ MAXIMUM. TRANSITION DUCTWORK AS REQUIRED.

B. PLAN NOTE #2 APPLIES TO ALL ROOF MOUNTED EXHAUST FANS AND INTAKE HOOD ON THIS SHEET.

1.99 M220D – ROOF PLAN – UNIT C - MECHANICAL

A. NEW PLAN NOTE #2: ROOF OPENING 12″/12″ MAXIMUM. TRANSITION DUCTWORK AS REQUIRED.

B. PLAN NOTE #2 APPLIES TO ALL ROOF MOUNTED EXHAUST FANS ON THIS SHEET.

1.100 M401 – DETAILS - MECHANICAL

A. DETAIL H AHU-B1 PROFILE: CHANGE ACCESS HAND FOR ALL SECTIONS. DELETE DAMPERS AT MIXING BOX. DAMPERS WILL BE IN DUCTWORK. DELETE REAR INLET.

1.101 M601 – SCHEDULES - MECHANICAL

A. DELETE VUV-F118 FROM VERTICAL UNIT VENTILATOR SCHEDULE

B. ADD UV-F118 TO UNIT VENTILATOR SCHEDULE

1.102 M602 – SCHEDULES - MECHANICAL

A. UPDATE ROOF RELIEF AND INTAKE VENT SCHEDULE

ELECTRICAL

1.103 ED201B - GROUND LEVEL - UNIT B - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.104 ED201C - GROUND LEVEL - UNIT C - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.105 ED201D - GROUND LEVEL - UNIT D - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.106 ED202C - SECOND LEVEL - UNIT C - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.107 ED202D - SECOND LEVEL - UNIT D - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.108 ED202F - SECOND LEVEL - UNIT F - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.109 ED202G - SECOND LEVEL - UNIT G - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.110 ED203B - UPPER LEVEL - UNIT B - ELECTRICAL DEMOLITION

A. Reissue this drawing in its entirety.

1.111 E100 - SITE PLAN - ELECTRICAL

A. Reissue this drawing in its entirety.

1.112 E201D - GROUND LEVEL - UNIT D - LIGHTING

A. Reissue this drawing in its entirety.

1.113 E202F - SECOND LEVEL - UNIT F - LIGHTING

A. Reissue this drawing in its entirety.

1.114 E202G - SECOND LEVEL - UNIT G - LIGHTING

A. Reissue this drawing in its entirety.

1.115 E203B - UPPER LEVEL - UNIT B - LIGHTING

A. Reissue this drawing in its entirety.

1.116 E211A - GROUND LEVEL - UNIT A - POWER

A. Reissue this drawing in its entirety.

1.117 E211B - GROUND LEVEL - UNIT B - POWER

A. Reissue this drawing in its entirety.

1.118 E211C - GROUND LEVEL - UNIT C - POWER

A. Reissue this drawing in its entirety.

1.119 E211D - GROUND LEVEL - UNIT D - POWER

A. Reissue this drawing in its entirety.

1.120 E211E – GROUND LEVEL – UNIT E- POWER

A. Reissue this drawing in its entirety

1.121 E212B - SECOND LEVEL - UNIT B - POWER

A. Reissue this drawing in its entirety.

1.122 E212C - SECOND LEVEL - UNIT C - POWER

A. Reissue this drawing in its entirety.

1.123 E212D - SECOND LEVEL - UNIT D - POWER

A. Reissue this drawing in its entirety.

1.124 E212E – SECOND LEVEL – UNIT E- POWER

A. Reissue this drawing in its entirety

1.125 E212F – SECOND LEVEL – UNIT F- POWER

A. Reissue this drawing in its entirety

1.126 E212G - SECOND LEVEL - UNIT G - POWER

A. Reissue this drawing in its entirety.

1.127 E213B - UPPER LEVEL - UNIT B - POWER

A. Reissue this drawing in its entirety.

1.128 E501 - RISER DIAGRAM - ELECTRICAL

A. Reissue this drawing in its entirety.

1.129 E601 - SCHEDULES - ELECTRICAL

A. Reissue this drawing in its entirety.

1.130 E611 - SCHEDULES - PANELBOARDS

A. Reissue this drawing in its entirety.

TECHNOLOGY

1.131 TD000 – LOWER LEVEL OVERALL DEMOLTION PLAN

A. Updated General Demolition Notes Note N

1.132 T100 – LOWER LEVEL OVERALL DISTRIBUTION PLAN

A. Removed Redundant conduit

1.133 T100D – LOWER LEVEL DISTRIBUTION PLAN – UNIT D

A. Removed Redundant conduit

B. Removed Section View

1.134 T201B – GROUND LEVEL TECHNOLOGY PLAN – UNIT B

A. Added Sheet Note #8.

B. Updated Telecom Legend.

C. Removed Card Reader -Mullion Mounted B102-2-CR from door B102-2.

D. Added Data Location - Flush Mounted B310-B-38/39 in room B101.

1.135 T300 - TELECOM DIAGRAMS

A. Updated Detail #2 - New Telecom Riser Cabling Diagram.

1.136 T400 - TECHNOLOGY/ AV DETAILS

A. Updated Detail #1 - Above Ceiling Data Location.

B. Updated Detail #2 - AV Input Location - Type 1 Surface Mounted.

C. Updated Detail #3 - AV Input Location - Type 1 Flush Mounted.

D. Added device symbol to Detail #3 - AV Input Location - Type 1 Flush Mounted.

E. Updated Detail #8 - Data Re-Cable Location - Flush Mounted.

F. Updated Detail #9 - Data Re-Cable Location - Surface Mounted.

G. Removed Detail #11 - Monitor Location - Flush Mounted.

H. Removed Detail #12 - Viewboard Location - Surface Mounted.

1.137 T401 - TECHNOLOGY/ AV DETAILS

A. Updated Detail #1 - Viewboard Location - Flush Mounted.

B. Added device symbol to Detail #1 - Viewboard Location - Flush Mounted.

C. Added Detail #4 - Monitor Location - Flush Mounted.

D. Added Detail #5 - Viewboard Location - Surface Mounted.

E. Added Detail #6 - AV Floor Box Location.

F. Added Detail #7 - Paging Speaker - Wall Mounted.

G. Added Detail #8 - Wall Phone Location.

1.138 T402 - SECURITY DETAILS

A. Removed Detail #2 - Lockdown & Door Release Button Location.

B. Renumber Details.

1.139 T403 – SECURITY DETAILS

A. Removed Detail #8 – EAC Door Type S3MIO - Dual Mullion Mount Card Reader

1.140 T500 - TECHNOLOGY/ SECURITY SCHEDULES

A. Updated Technology/ Security Schedules.

B. Updated MDF B310 Technology Schedule.

PART 2 - COLUMBUS EAST HIGH SCHOOL DRAWINGS

ARCHITECTURAL

2.1 A600 – CASEWORK SCHEDULES

A. Revise spec section for casework to read 12 35 57 for all base cabinets, wall cabinets, and tall cabinets.

MECHANICAL

2.2 M201 – SECOND FLOOR PLAN – AIR DISTRIBUTION

A. Change location of EF-C265 and grilles within Dental Lab C265.

2.3 M601 – SCHEDULES - MECHANICAL

A. Change Blower Coil Unit Schedule tags to match 200 series drawings.

B. Change Exhaust Fan Schedule tags to match 200 series drawings.

2.4 M701 – CONTROLS - GENERAL

A. Delete Cabinet Heater points list.

B. Insert Fan Coil / Blower Coil Unit Control Schematic, sequence and points list.

ELECTRICAL

2.5 E212 – SECOND FLOOR PLAN - POWER

A. Change new Exhaust Fan tags to match 200 series drawings.

B. Change location of EF-C265.

2.6 E601 – SCHEDULES - ELECTRICAL

A. Change new Exhaust Fan tags in Panelboard Schedules to match 200 series drawings.

B. Change manufacturer details on interior light fixture schedule.

PART 3 - OTHER ITEMS

3.1 NOT USED

A. Not Used

CSO
ARCHITECTURE · INTERIOR DESIGN

PART 4 - QUESTIONS AND ANSWERS

4.1 Please advise if DC1, FEC, and MB2 on sheet A901A should be provided? These are not specified to be furnished.

A. See A901A revisions in this addendum

4.2 Small group rooms appear to have a wall mounted fixture, but it is not specified on the finish plans. Please advise if any marker or tack board is required.

A. Wall mounted fixture shown are video boards – no tack or markerboards.

4.3 Please confirm that VM-1 & VM-2 are not Owner provided & installed on A901A.

A. See A901A revisions in this addendum

4.4 10 26 00 – Wall and Door Specification lists a product that is not available as described. As noted, they are asking for a 1.5" long leg with a retainer. The product they have specified is NOT available by any of the manufacturers listed in the Spec. Is a 2" leg and retainer acceptable?

A. A 3" leg is preferred. This has been addressed in specification revisions for Addendum 2

4.5 Is the contractor to provide and install HEXAGON ACRYCLIC SIGNAGE HOLDER as shown on A610 at Columbus East.

A. Yes, specification will be issued in Addendum 3

4.6 MB-1 on Sheet A901A at LF smith is calling out for a salvaged markerboard on the equipment schedule, but note #10 calls out that these are new marker boards. Please advise if these are NEW or SALVAGED.

A. See A901A revision to schedule in this addendum

4.7 Please advise on size of new MB-2 at LF smith on sheet A901A

A. See A901A revision to schedule in this addendum

4.8 L. Frances Smith A409 through A453 have a lit of incomplete section and detail notes. Please advise if any additional detail will be provided.

A. See updated sheets in this addendum

4.9 L. Frances Smith A505 Window Schedules appear incomplete and or missing information. Please advise on material, finish, glass, etc.

A. All windows to be HM (Hollow Metal) PT (Painted) G3 – glazing type

4.10 L. Frances Smith A600 Casework Counter Schedule appears incomplete. Please review and advise if there will be any updated information.

A. Casework schedule for countertops were revised in this addendum to have only one scheduled countertop. All countertops in job are now CT1 which is a 24" deep countertop. Reference the A800 series plans for finish of countertops.

4.11 L. Frances Smith A602 missing the counter top notes. Please review and advise if revisions are forthcoming.

A. Countertops in details 8 & 9 are existing to remain.

4.12 Trying to correlate the Finish Floor Elevation noted as 0'-0" on the Structural sheets back to the Civil drawings. In area G (and all foundation plans) it notes the Finish Floor is 0'-0" and then provides the dimension correlating back to 0'-0" for top of footing and top of slab. So in this instance at area G the T/Pier is +4'-1-1 ½" above finish floor, and slab is +4'-9 ½". That also doesn't appear to make sense if finish floor is 644.25 if that is to correlate to 0'-0", then the footers are above grade. Does 0'-0" then correlate to 639.46'? What Unit correlates to that Finish Floor Elevation?

A. 0'-0" corresponds to USGS 639.46/639.50 and is the first-floor FFE in parts of Unit B and Unit C. The Unit G FFE is +4'-9½" which is +/-644.25. The top of pier elevation of +4'-1½" is 8" below the Unit G FFE. The top of footing elevation in Unit G is typically -4'-10", which is 9'-7½" below the Unit G FFE and approximately matches the existing top of footing elevation. Existing grade in this area is roughly two to three feet above the top of footing. Please note that USGS elevations of the existing building components will need to be field-verified.

4.13 Specification 10 11 00 calls for tack boards to have a 2" powder coated frame. These are not available by any approved manufacturer. Please confirm a 1 ½" aluminum frame is acceptable.

A. See revised specifications in this Addendum

4.14 Please provide a specification for louvers

A. In 23 37 13 Diffusers, Registers, Grilles and Louvers – will have a minor revision in Addendum 02. Louvers for Self contained UV supplied by UV MFR

4.15 Please revise Electrical Schedules to reflect Architectural & Owner Room Numbers at LF Smith.

A. See E601 and E611 for updated panel schedules

4.16 Specification 27 15 00.23 is not included in the specification book. Please advise if this is forthcoming or should be removed?

A. Section can be removed from the TOC

4.17 Where is Panelboard LP-11 located?

A. See drawing E213B

4.18 Drawing E212B Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?

A. See addendum 2 drawings

4.19 Drawing E212D Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?

A. See addendum 2 drawings

4.20 Drawing E212F Second level power devices do not indicate a panel to be connected to. What are the panels and circuits?

A. See addendum 2 drawings

4.21 What is an F41 light fixture? E201B Ground Level

A. See drawing E601 from addendum 2 documents

4.22 What is an F10-06 light Fixture?

A. See drawing E601 from addendum 2 documents

4.23 What is an F10-04 light fixture?

A. See drawing E601 from addendum 2 documents

4.24 Please advise on panel/circuit information for room G210

A. See addendum 2 documents

4.25 Please advise on panel/circuit information for room G201

A. See addendum 2 documents

4.26 Is the Bus Lot detention pond required within the base bid work?

Yes, the roof drainage of building additions at Unit A and Unit G drain to the east side of the site. Per requirements of the City of Columbus, new impervious areas shall be treated for water quality and the runoff shall be reduced from the site. Therefore, the detention would be needed in base bid. The detention, however, is sized to accommodate the Alternate bus parking lot in anticipation of those improvements.

4.27 Please advise if a new fire hydrant is required at the new bus drive

A. Yes, the existing fire protection vault near Waycross Drive contains a post indicator valve (PIV) and Fire Department Connection (FDC), which should have a hydrant within a 100-foot vicinity. The nearest existing fire hydrant is across the street, exceeding 100 feet distance from the vault. In anticipation of the bus parking lot (Alternate), a fire engine is likely to park next to the fire vault within the bus lot drive aisle for accessing the FDC / PIV. The proposed hydrant will be in close proximity to this location.

Additionally, a second fire hydrant was requested east of the school by the Fire Department in anticipation of the bus parking lot construction (Alternate).

END ADDENDUM #2

SECTION 03 01 30 – MAINTENANCE OF CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes trowel-grade cementitious topping for interior and exterior fill; repair of concrete surfaces above, on, or below grade; and re-sloping of concrete surfaces.

1.03 REFERENCES

A. ASTM C109/mod, Compressive Strength of Hydraulic Cement Mortars

B. ICRI Technical Guideline No. 03732 Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays

1.04 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include plans indicating substrates, locations, and average depths of concrete infill requirements based on survey of substrate conditions.

1.05 INFORMATIONAL SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.

B. Qualification Data: For Installer

1.06 QUALITY ASSURANCE

A. Manufacturer's Qualifications: The manufacturer shall be a company with at least five years experience and regularly engaged in the manufacture and marketing of products specified herein.

B. Installation of the ARDEX product must be completed by a factory-trained, certified applicator, such as an ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the manufacturer. Please Contact ARDEX Engineered Cements (724) 203- 5000 for a list of recommended installers.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°c and Protect from direct sunlight.

C. Handle products in accordance with manufacturer's printed recommendations.

1.08 PROJECT CONDITIONS

A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

B. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.01 MAINTENANCE OF CAST-IN-PLACE CONCRETE

A. Portland cement-based, polymer-modified interior and exterior concrete repair material.

1. Provide products from a listed manufacturer or architect approved equivalent:

a. ARDEX CP™ Concrete Patch

2. Performance Requirements:

a. Application: Trowel
b. Compressive Strength: 3600 psi (253 kg/cm2) at 28 Days
c. Working Time: 30 minutes
d. Pot Life: 30 minutes
e. Walkable: Light foot traffic in 2 hours.
f. Color: Concrete Gray

2.02 WATER

A. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

PART 3 - EXECUTION

3.01 PREPARATION A.

A. General: Prepare substrate in accordance with manufacturer’s instructions. Prior to proceeding with any repair, please refer to the International Concrete Repair Institute’s ICRI 03730 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion; ICRI 03732 Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays; and the American Concrete Institute’s ACI 546R-04 Concrete Repair Guide for general guidelines for concrete repair.

1. All concrete and masonry substrates must be sound, solid, dry, and completely free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker. Overwatered, frozen or otherwise weak concrete surfaces must

also be cleaned down to sound, solid concrete by mechanical methods such as scarifying, scabbling or similar in accordance with ICRI 03732 before priming. Acid etching and the use of sweeping compounds and solvents are not acceptable.

2. The repair area must be saw cut in a basic rectangular shape at least ¼" (6 mm) in depth. The cuts should be made at 90° angle, and should be slightly keyed. Chip out the concrete inside the cuts to a minimum depth of ¼" (6 mm) until the area is squared or box shape.
3. Mechanically prepare surface to obtain an exposed aggregate surface with a minimum surface profile of approximately 1/16" (1.5 mm).
4. All cracks and spalls must be repaired prior to installing the patch.

B. Joint Preparation

1. Moving Joints – honor all expansion and isolation joints up through the underlayment. A flexible sealing compound may be installed.
2. Dormant Cracks and Dormant Control Joints – fill all dormant control joints and dormant cracks with joint filler.

3.02 APPLICATION

A. Mixing:

1. Add 5 quarts (4.75 L) of clean potable water per 40-pound (18 kg) bag.
2. Mix using a ½" (12 mm, 650 rpm) low speed heavy-duty mixing drill with a ring mixing paddle. Mix to a uniform, lump-free consistency. Do not overwater.

B. Application 1.

1. Place a scratch coat of the compound onto an area of concrete using a steel trowel, applying enough pressure to ensure good compound-to-concrete contact. Then, use a wood or magnesium float, apply over the area to be repaired. If necessary, use a straightedge to screed the surface to match existing elevation. After the compound takes an initial set (Approx. 30-40 minutes at 70° F (21° C), use a steel trowel to finish the infill.
2. Product can be installed from ¼" to ½" (6 to 12 mm) neat and up to 2" (5 cm) with the addition of proper aggregate. For areas thicker than ½" (12mm) mix product with washed and well-graded 1/8" to ¼" (3 to 6mm) pea gravel. Mix the product with water first, then add 1 part by volume of aggregate, mixing until the aggregate is completely coated. Do not use sand. If aggregate is wet, reduce the amount of water to avoid over-watering. Please note that thicker areas will take longer to set and will reduce overall coverage.

C. Curing

1. Avoid applying this product if rain is expected within 6 to 8 hours or if freezing temperatures could occur within 24 hours of application. As with any cementitious material, these conditions can alter the appearance and performance of the patching compound.

D. Sealing 1.

1. Product should be sealed with a waterborne, breathable concrete sealer to resist damage from standing water, salt, oil as well as staining and marking. Sealing can proceed once it has cured for a minimum of 24 hours.

E. Cleaning

1. Remove excess material before material cures. If material has cured, remove using mechanical methods which will not damage substrate.

END OF SECTION

SECTION 03 35 00 - CONCRETE SURFACE TREATMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes the following:

1. Penetrating Liquid Floor Treatment (Concrete Sealer).

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer .

B. Material Certificates: For each of the following, signed by manufacturers:

1. Floor and slab treatments.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing concrete surface treatment products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

C. Source Limitations: Obtain each type of material of the same brand from the same manufacturer.

D. Mockups: Cast concrete slab-on-grade panels to demonstrate typical joints, surface finish, texture, tolerances, floor treatments, and standard of workmanship.

1. Build panel approximately 200 sq. ft. (18.6 sq. m) for slab-on-grade in the location indicated or, if not indicated, as directed by Architect.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.01 LIQUID FLOOR TREATMENTS

A. VOC Content: Liquid floor treatments shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

1. Products: Subject to compliance with requirements, provide one of the following:

a. ChemMasters; Chemisil Plus.
b. ChemTec Int'l; ChemTec One.
c. Conspec by Dayton Superior; Intraseal.
d. Curecrete Distribution Inc.; Ashford Formula.
e. Dayton Superior Corporation; Day-Chem Sure Hard (J-17).
f. Euclid Chemical Company (The), an RPM company; Euco Diamond Hard.
g. L&M Construction Chemicals, Inc.; Seal Hard.
h. Meadows, W. R., Inc.; LIQUI-HARD.
i. Nox-Crete Products Group; Duro-Nox.

PART 3 - EXECUTION

3.01 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

3.02 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than 28 days' old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

3.03 PROTECTION OF LIQUID FLOOR TREATMENTS

A. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

END OF SECTION

Legend:

↯ Electrified Opening

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	A201-1↯	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	A201-2	EX.PR	
SMITH ELEMENTARY	A202	20	
SMITH ELEMENTARY	A203	05	
SMITH ELEMENTARY	A204-1	21	
SMITH ELEMENTARY	A204-2	21	
SMITH ELEMENTARY	A205	32	
SMITH ELEMENTARY	A206-1	20	
SMITH ELEMENTARY	A206-2	33	
SMITH ELEMENTARY	A207	05	
SMITH ELEMENTARY	A208	21	
SMITH ELEMENTARY	A209	20	
SMITH ELEMENTARY	A210	05	
SMITH ELEMENTARY	A211	29	
SMITH ELEMENTARY	A212	20	
SMITH ELEMENTARY	A213	22	
SMITH ELEMENTARY	A214	05	
SMITH ELEMENTARY	A215	33	
SMITH ELEMENTARY	A216	21	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	A217	29	
SMITH ELEMENTARY	A218	05	
SMITH ELEMENTARY	A219-1	21	
SMITH ELEMENTARY	A219-2	21	
SMITH ELEMENTARY	A220	20	
SMITH ELEMENTARY	A221	05	
SMITH ELEMENTARY	B101-1	40	CR, AO
SMITH ELEMENTARY	B101-2	39	CR, AO
SMITH ELEMENTARY	B102-1	23	CR, PBR
SMITH ELEMENTARY	B102-2	34	CR X CR, PBR
SMITH ELEMENTARY	B103	25	CR
SMITH ELEMENTARY	B103A	13	
SMITH ELEMENTARY	B104	08	
SMITH ELEMENTARY	B108	13	
SMITH ELEMENTARY	B109	38	CR
SMITH ELEMENTARY	B110	21	
SMITH ELEMENTARY	B111	08	
SMITH ELEMENTARY	B205	20	
SMITH ELEMENTARY	B206-1	21	
SMITH ELEMENTARY	B206-2	21	
SMITH ELEMENTARY	B207	20	
SMITH ELEMENTARY	B302	EX.SGL	
SMITH ELEMENTARY	B303	04	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	B304	EX.SGL	
SMITH ELEMENTARY	B305	EX.SGL	
SMITH ELEMENTARY	B306	EX.SGL	
SMITH ELEMENTARY	B308	14	
SMITH ELEMENTARY	B310	EX.SGL	
SMITH ELEMENTARY	B312	EX.SGL	
SMITH ELEMENTARY	B313	13	
SMITH ELEMENTARY	B314	13	
SMITH ELEMENTARY	B315	13	
SMITH ELEMENTARY	B316	30	
SMITH ELEMENTARY	C101-1	24	CR
SMITH ELEMENTARY	C101-2	14	
SMITH ELEMENTARY	C102	19	
SMITH ELEMENTARY	C103	19	
SMITH ELEMENTARY	C104	09	
SMITH ELEMENTARY	C105	25	CR
SMITH ELEMENTARY	C106	11	
SMITH ELEMENTARY	C107	13	
SMITH ELEMENTARY	C109	13	
SMITH ELEMENTARY	C110	19	
SMITH ELEMENTARY	C111-1	13	
SMITH ELEMENTARY	C111-2	10	
SMITH ELEMENTARY	C112	13	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	C113	13	
SMITH ELEMENTARY	C114	19	
SMITH ELEMENTARY	C115	27	
SMITH ELEMENTARY	C116	17	
SMITH ELEMENTARY	C117	16	
SMITH ELEMENTARY	C119	16	
SMITH ELEMENTARY	C120	13	
SMITH ELEMENTARY	C121	13	
SMITH ELEMENTARY	C122	13	
SMITH ELEMENTARY	C123	18	
SMITH ELEMENTARY	C124-1	13	
SMITH ELEMENTARY	C124-2	13	
SMITH ELEMENTARY	C125-1	41	CR
SMITH ELEMENTARY	C125-2	03	
SMITH ELEMENTARY	C126	EX.PR	
SMITH ELEMENTARY	C128	08	
SMITH ELEMENTARY	C129	08	
SMITH ELEMENTARY	C130	13	
SMITH ELEMENTARY	C131	15	
SMITH ELEMENTARY	C132	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	C133-1	20	
SMITH ELEMENTARY	C133-2	EX.SGL	
SMITH ELEMENTARY	C134-1	22	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	C134-2	22	
SMITH ELEMENTARY	C135	06	
SMITH ELEMENTARY	C136	26	
SMITH ELEMENTARY	C137-1	20	
SMITH ELEMENTARY	C137-2	EX.SGL	
SMITH ELEMENTARY	C138	06	
SMITH ELEMENTARY	C201 ↙	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	C202	20	
SMITH ELEMENTARY	C203	08	
SMITH ELEMENTARY	C204	33	
SMITH ELEMENTARY	C205	21	
SMITH ELEMENTARY	C206-1	21	
SMITH ELEMENTARY	C206-2	20	
SMITH ELEMENTARY	C207	21	
SMITH ELEMENTARY	C208	31	
SMITH ELEMENTARY	C209	20	
SMITH ELEMENTARY	C210	08	
SMITH ELEMENTARY	C211	20	
SMITH ELEMENTARY	C212	08	
SMITH ELEMENTARY	C213-1	20	
SMITH ELEMENTARY	C213-2	33	
SMITH ELEMENTARY	C214	21	
SMITH ELEMENTARY	C215	06	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	C216-1	21	
SMITH ELEMENTARY	C216-2	21	
SMITH ELEMENTARY	C217	28	
SMITH ELEMENTARY	C218	20	
SMITH ELEMENTARY	C219	08	
COLUMBUS EAST HS	C259	CE1	
COLUMBUS EAST HS	C261-1	CE1	
COLUMBUS EAST HS	C261-2	CE2	
COLUMBUS EAST HS	C262-1	CE1	
COLUMBUS EAST HS	C262-2	CE2	
COLUMBUS EAST HS	C263-1	CE3	
COLUMBUS EAST HS	C263-2	CE3	
COLUMBUS EAST HS	C263A	CE4	
COLUMBUS EAST HS	C263B	CE5	
COLUMBUS EAST HS	C263C	CE6	
COLUMBUS EAST HS	C264-1	CE7	
COLUMBUS EAST HS	C264-2	CE2	
COLUMBUS EAST HS	C265	CE8	
COLUMBUS EAST HS	C265A-1	CE1	
SMITH ELEMENTARY	D001	EX.SGL	
SMITH ELEMENTARY	D002	EX.SGL	
SMITH ELEMENTARY	D004-1	EX.SGL	
SMITH ELEMENTARY	D004-2	EX.SGL	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	D005	EX.SGL	
SMITH ELEMENTARY	D006	EX.SGL	
SMITH ELEMENTARY	D007	EX.SGL	
SMITH ELEMENTARY	D008	EX.SGL	
SMITH ELEMENTARY	D101-1 ↗	45	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	D101-2 ↗	45	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	D102-1	36	
SMITH ELEMENTARY	D102-2	36	
SMITH ELEMENTARY	D103	11	
SMITH ELEMENTARY	D104	22	
SMITH ELEMENTARY	D105-1	21	
SMITH ELEMENTARY	D105-2	21	
SMITH ELEMENTARY	D106	26	
SMITH ELEMENTARY	D107	27	
SMITH ELEMENTARY	D109	30	
SMITH ELEMENTARY	D110-1	36	
SMITH ELEMENTARY	D110-2	36	
SMITH ELEMENTARY	D112	22	
SMITH ELEMENTARY	D113	20	
SMITH ELEMENTARY	D115	EX.SGL	
SMITH ELEMENTARY	D116	EX.SGL	
SMITH ELEMENTARY	D117	20	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	D118	06	
SMITH ELEMENTARY	D119-1	21	
SMITH ELEMENTARY	D119-2	21	
SMITH ELEMENTARY	D120-1	20	
SMITH ELEMENTARY	D120-2	EX.SGL	
SMITH ELEMENTARY	D122	06	
SMITH ELEMENTARY	D123	19	
SMITH ELEMENTARY	D124	20	
SMITH ELEMENTARY	D125	22	
SMITH ELEMENTARY	D126	EX.SGL	
SMITH ELEMENTARY	D127	06	
SMITH ELEMENTARY	D128	29	
SMITH ELEMENTARY	D131	37	DPS ONLY
SMITH ELEMENTARY	D201-1	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	D201-2	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	D202	20	
SMITH ELEMENTARY	D203	08	
SMITH ELEMENTARY	D204-1	21	
SMITH ELEMENTARY	D204-2	21	
SMITH ELEMENTARY	D205	28	
SMITH ELEMENTARY	D206-1	20	
SMITH ELEMENTARY	D206-2	33	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	D207	06	
SMITH ELEMENTARY	D208	21	
SMITH ELEMENTARY	D209	20	
SMITH ELEMENTARY	D210	08	
SMITH ELEMENTARY	D212	EX.SGL	
SMITH ELEMENTARY	D213	EX.SGL	
SMITH ELEMENTARY	D214	20	
SMITH ELEMENTARY	D215	08	
SMITH ELEMENTARY	D216	33	
SMITH ELEMENTARY	D217	21	
SMITH ELEMENTARY	D218-1	21	
SMITH ELEMENTARY	D218-2	21	
SMITH ELEMENTARY	D219	21	
SMITH ELEMENTARY	D220	31	
SMITH ELEMENTARY	D221	20	
SMITH ELEMENTARY	D222	08	
SMITH ELEMENTARY	E101	EX.PR	
SMITH ELEMENTARY	E102-1	EX.PR	
SMITH ELEMENTARY	E102-2	EX.PR	
SMITH ELEMENTARY	E102-3	EX.PR	
SMITH ELEMENTARY	E103	EX.PR	
SMITH ELEMENTARY	E585	EX.SGL	
SMITH ELEMENTARY	F101-1	44	CONTROLLED, EXIST ELEC HOLD OPENS

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	F101-2	EX.PR	
SMITH ELEMENTARY	F102-1	EX.SGL	
SMITH ELEMENTARY	F102-2	EX.SGL	
SMITH ELEMENTARY	F103	EX.SGL	
SMITH ELEMENTARY	F106	EX.SGL	
SMITH ELEMENTARY	F107	EX.SGL	
SMITH ELEMENTARY	F109	EX.PR	
SMITH ELEMENTARY	F110	EX.PR	
SMITH ELEMENTARY	F111	EX.SGL	
SMITH ELEMENTARY	F114	EX.PR	
SMITH ELEMENTARY	F115	EX.SGL	
SMITH ELEMENTARY	F116	EX.SGL	
SMITH ELEMENTARY	F201-1	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	F201-2	EX.PR	
SMITH ELEMENTARY	F202-1	42	
SMITH ELEMENTARY	F202-2	42	
SMITH ELEMENTARY	F203	13	
SMITH ELEMENTARY	F205	EX.SGL	
SMITH ELEMENTARY	F206-1	EX.SGL	
SMITH ELEMENTARY	F206-2	EX.PR	
SMITH ELEMENTARY	F206-3	EX.SGL	
SMITH ELEMENTARY	F207-1	EX.SGL	
SMITH ELEMENTARY	F207-2	EX.SGL	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	F208	EX.SGL	
SMITH ELEMENTARY	F210-1	EX.SGL	
SMITH ELEMENTARY	F210-2	EX.SGL	
SMITH ELEMENTARY	F210-3	EX.SGL	
SMITH ELEMENTARY	F212	EX.SGL	
SMITH ELEMENTARY	F213	EX.SGL	
SMITH ELEMENTARY	F214	EX.SGL	
SMITH ELEMENTARY	F216	EX.SGL	
SMITH ELEMENTARY	F217	EX.SGL	
SMITH ELEMENTARY	G201 ↙	44	CONTROLLED, EXIST ELEC HOLD OPENS
SMITH ELEMENTARY	G202-1	EX.SGL	
SMITH ELEMENTARY	G202-2	EX.SGL	
SMITH ELEMENTARY	G203	EX.SGL	
SMITH ELEMENTARY	G204-1	EX.SGL	
SMITH ELEMENTARY	G204-2	EX.SGL	
SMITH ELEMENTARY	G205	EX.PR	
SMITH ELEMENTARY	G206	04	
SMITH ELEMENTARY	G207	29	
SMITH ELEMENTARY	G208	20	
SMITH ELEMENTARY	G209	13	
SMITH ELEMENTARY	G210-1	12	
SMITH ELEMENTARY	G210-2	12	
SMITH ELEMENTARY	G211	01	

Building	Door#	HwSet#	Information
SMITH ELEMENTARY	G212	07	
SMITH ELEMENTARY	G213	20	
SMITH ELEMENTARY	G214	22	
SMITH ELEMENTARY	G215-1	43	CR
SMITH ELEMENTARY	G215-2	02	DELAYED EGRESS MAG LOCKS (VARIANCE)
SMITH ELEMENTARY	G216	20	
SMITH ELEMENTARY	G217	22	
SMITH ELEMENTARY	G218-1	12	
SMITH ELEMENTARY	G218-2	13	
SMITH ELEMENTARY	G219	32	
SMITH ELEMENTARY	G220	13	
SMITH ELEMENTARY	G221	20	
SMITH ELEMENTARY	G222	22	
SMITH ELEMENTARY	G223	15	
SMITH ELEMENTARY	G224	22	
SMITH ELEMENTARY	ST1-1	EX.SGL	
SMITH ELEMENTARY	ST1-2	EX.SGL	
SMITH ELEMENTARY	ST1-3	EX.SGL	
SMITH ELEMENTARY	ST1-4	EX.SGL	
SMITH ELEMENTARY	ST2-1	EX.SGL	
SMITH ELEMENTARY	ST2-2	EX.SGL	
SMITH ELEMENTARY	ST3	35	

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components
3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. "Metal Doors and Frames"
   b. "Flush Wood Doors"
   c. "Aluminum-Framed Entrances and Storefronts"
6. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.
7. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
8. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
   a. Wiring Diagrams: For power, signal, and control wiring and including:
      1) Details of interface of electrified door hardware and building safety and security systems.
      2) Schematic diagram of systems that interface with electrified door hardware.
      3) Point-to-point wiring.
      4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.

a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule:
   a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
   b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
   c. Indicate complete designations of each item required for each opening, include:
      1) Door Index: door number, heading number, and Architect's hardware set number.
      2) Quantity, type, style, function, size, and finish of each hardware item.
      3) Name and manufacturer of each item.
      4) Fastenings and other pertinent information.
      5) Location of each hardware set cross-referenced to indications on Drawings.
      6) Explanation of all abbreviations, symbols, and codes contained in schedule.
      7) Mounting locations for hardware.
      8) Door and frame sizes and materials.
      9) Degree of door swing and handing.
      10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:
   a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
   b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
   c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
   d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
   e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
   f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
   a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
   b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Final approved hardware schedule edited to reflect conditions as installed.
   d. Final keying schedule
   e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
   f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
   a. Fire door assemblies, in compliance with NFPA 80.
   b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project′s vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.
   d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.

b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
   b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Electrified Door Hardware
   a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

4. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Requirements for access control.
      5) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Inspect and discuss electrical roughing-in for electrified door hardware.
   d. Review sequence of operation for each type of electrified door hardware.
   e. Review required testing, inspecting, and certifying procedures.
   f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:
   a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

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

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    a. Mechanical Warranty
        1) Locks: 10 Years
        2) Exit Devices: 10 Years
        3) Closers: 30 Years
    b. Electrical Warranty
        1) Locks: 3 Years
        2) Exit Devices: 3 Years
        3) Automatic Operators: 2 Years

1.08 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
2. Use materials which match materials of adjacent modified areas.
3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.
2. For closers and panic devices: Verify with Architect and/or Owner if thru-bolts are required at specific door materials.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Ives 5BB series

2. Acceptable Manufacturers and Products:
   a. Hager BB series
   b. McKinney TB series
   c. Stanley (Best/Dormakaba) FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. Hinge Height:
   a. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide: 4-1/2 inches (114 mm) high
   b. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide: 5 inches (127 mm) high
   c. 2 inches or thicker doors: 5 inches (127 mm) high, regardless of door width

4. Hinge Width: 4-1/2 inches (114 mm) wide typical. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
5. Hinge quantity: Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins

7. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

8. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.

2.04 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Select
   b. Pemko

B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.
8. Adjust hinge model/width as required for door thickness or construction.

2.05 ELECTRIC POWER TRANSFER

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Von Duprin EPT-10

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.06 DOOR CORDS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Schlage 788/798 Series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide door cords with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.07 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage ND series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Indicators: Where specified, provide escutcheon with lock status indicator window on top of lockset rose:
   a. Escutcheon height (including rose) 6.05 inches high by 3.68 inches wide.
   b. Indicator window measuring a minimum 3.52-inch by .60 inch with 1.92 square-inches of front facing viewing area and 180-degree visibility with a total of .236 square-inches of total viewable area.
   c. Provide snap-in serviceable window to prevent tampering. Lock must function if indicator is compromised.
   d. Provide messages color-coded with full text and symbol, as scheduled, for easy visibility.
   e. Unlocked and Unoccupied message will display on white background, and Locked and Occupied message will display on red background.

8. Provide electrified options as scheduled in the hardware sets.

9. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
   a. Lever Design: Rhodes.

2.08 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Rockwood
   b. Trimco
   c. Don-Jo
   d. Hager

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.09 MORTISE LOCKS AND DEADBOLTS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage L9000 series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.

7. Provide motor based electrified locksets that comply with the following requirements:
   a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
   b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case.
   c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
   d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate "hot levers" in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
   e. Connections – provide quick-connect Molex system standard.

8. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
   a. Lever Design: Schlage 06B for Smith Elem and 17B for Columbus East HS

2.10 NARROW STILE DEADLOCK/DEADLATCH

A. Manufacturers and Products:

1. Scheduled Manufacturer:
   a. Adams Rite

2. Acceptable Manufacturers:
   a. C.R. Laurence

B. Requirements:

1. Provide narrow style aluminum door deadlocks/deadlatches.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide manufacturer's standard strikes unless extended lip strikes are necessary to protect trim.

2.11 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 99 series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide grooved touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.

4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.12 ELECTRIC STRIKES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 6000 Series

2. Acceptable Manufacturers and Products:
   a. HES 1006 Series

B. Requirements:

1. Provide electric strikes designed for use with type of locks shown at each opening.
2. Provide electric strikes UL Listed as burglary resistant that are tested to a minimum endurance test of 1,000,000 cycles.
3. Where required, provide electric strikes UL Listed for fire doors and frames.
4. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.13 DELAYED EGRESS MAGNETIC LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage M490DE series

2. Acceptable Manufacturers and Products:

a. No Substitute

B. Requirements:

1. Provide movement exit delay system certified to meet UL1034, UL10C, and the requirements of UL294 special locking arrangement including BOCA.
2. Provide movement exit delay system that meets NFPA 101 Life Safety Code governing delayed egress, IBC and/or other local and national fire codes acceptable to authority having jurisdiction as required.
3. Provide magnetic locks conforming to ANSI/BHMA A156.23 classification criteria including minimum holding force of 1000 LBF.
4. Provide magnetic locks equipped with SPDT Magnetic Bond Sensing device to monitor whether enough magnetic holding force exists to ensure adequate locking and SPDT Door Status Monitor device to monitor whether door is open or closed. Provide bond sensors fully concealed within electromagnet to resist tampering or damage.
5. Provide tamper proof fasteners, mounting brackets, and spacer bars required for mounting and details.
6. Provide power supply recommended and approved by manufacturer of delayed egress magnetic locks.
7. Where exit delay systems are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of exit delay system for each individual leaf. Switches control both doors simultaneously at pairs. Locate controls as directed by Architect.

2.14 PASSIVE INFRARED MOTION SENSORS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage SCAN II Series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide motion sensors as specified in hardware groups.

2.15 KEYSWITCHES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage 650 series

2. Acceptable Manufacturers and Products:
   a. Security Door Control 700 series

B. Requirements:

1. Provide key switches capable of being configured to momentary or maintained action.

2. Provide key switches that accept a mortise cylinder. Cylinders: Refer to "KEYING" article, herein.

2.16 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage/Von Duprin PS900 Series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
   a. 12/24 VDC Output, field selectable.
   b. Class 2 Rated power limited output.
   c. Universal 120-240 VAC input.
   d. Low voltage DC, regulated and filtered.
   e. Polarized connector for distribution boards.
   f. Fused primary input.
   g. AC input and DC output monitoring circuit w/LED indicators.
   h. Cover mounted AC Input indication.
   i. Tested and certified to meet UL294.
   j. NEMA 1 enclosure.
   k. Hinged cover w/lock down screws.
   l. High voltage protective cover.

2.17 CYLINDER HOUSINGS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Schlage

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide cylinder housings from same manufacturer of locksets, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer’s series as indicated. Refer to “KEYING” article, herein.

2. Provide cylinder housings in the below-listed configuration(s), distributed throughout the Project as indicated.
   a. Cylinder/Core Type: Small Format Interchangeable Core (SFIC)

3. Replaceable Construction Cores.
   a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
      1) 3 construction control keys
      2) 12 construction change (day) keys.

4. Verify with Owner where permanent cores are to be shipped to.

2.18 PERMANENT CORES, KEYING, KEYS

A. Supplied by Owner

B. Installed By Contractor

2.19 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Telkee

2. Acceptable Manufacturers:
   a. HPC
   b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
   a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
   b. Provide hinged-panel type cabinet for wall mounting.

2.20 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4040XP series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.21 ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4600 series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI/BHMA A156.19.
2. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
3. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door
4. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
5. Provide drop plates, brackets, and adapters for arms as required for details.
6. Provide actuator switches and receivers for operation as specified.
7. Provide weather-resistant actuators at exterior applications.
8. Provide key switches with LED's, recommended and approved by manufacturer of automatic operator as required for function described in operation description of hardware group below. Cylinders: Refer to "KEYING" article, herein.

9. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.
10. Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

2.22 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood
   c. Hager

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.23 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood
   c. Hager

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes kick and armor plates 1 1/2 inches (51 mm) less width of door on single doors, and 1 inch (25 mm) less width of door on pairs. Adjust width at doors with mullions, edge guards, gasketing or other conflicting hardware.
3. Size mop plates 1" less width of door. Adjust width as needed for edge guards or other conflicting hardware.
4. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.24 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:
   a. Glynn-Johnson

2. Acceptable Manufacturers:
   a. ABH

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.
2. Provide friction type at doors without closer and positive type at doors with closer.

2.25 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.26 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Zero International

2. Acceptable Manufacturers:
   a. National Guard
   b. Reese
   c. Pemko

B. Requirements:

1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.

2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.27 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Rockwood
   b. Trimco

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.28 ROLLER LATCHES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Rockwood
   b. Trimco

B. Requirements:

1. Provide roller latches with 4-7/8 inches (124 mm) strike at single doors to fit ANSI frame prep. If dummy levers are used in conjunction with roller latch mount roller latch at a height as to not interfere with proper mounting and height of dummy lever.
2. Provide roller latches with 2-1/4 inches (57 mm) full lip strike at pair doors. Mount roller in top rail of each leaf per manufacturer's template.

2.29 DOOR POSITION SWITCHES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Schlage

2. Acceptable Manufacturers:
   a. George Risk Industries, Inc.

B. Requirements:

1. Provide recessed or surface mounted type door position switches as specified.
2. Coordinate door and frame preparations with door and frame suppliers. If switches are being used with magnetic locking device, provide minimum of 4 inches (102 mm) between switch and magnetic locking device.

2.30 FINISHES

A. Provide finish for each item as indicated in the sets.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
2. Field modify and prepare existing doors and frames for new hardware being installed.
3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
   a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
   b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
   c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.03 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.

J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:

1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Connections to panel interface modules, controllers, and gateways.
6. Testing and labeling wires with Architect's opening number.

K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

L. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

M. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

N. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

O. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

P. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

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

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

S. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.04 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. ***Spring Hinges: Adjust to achieve positive latching when door can close freely from an open position of 30 degrees.
2. ***Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

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

3.05 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.06 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

125660 OPT0406251 Version 3

Legend:
Link to catalog cut sheet
Electrified Opening

Hardware Group No. 01

For use on Door #(s):
G211

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	TIME OUT LOCK	L9010 06B LESS INSIDE TRIM XL12-419 (LHR)		626	SCH
1	EA	ROLLER LATCH	RL30 @ HEAD		626	IVE
1	EA	OH STOP	410S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 02

For use on Door #(s):
G215-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		628	IVE
2	EA	DUMMY PUSH BAR X PULL TRIM	330 X 990DT		626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE) (FOR KEY SWITCH)		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING (FOR KEY SWITCH)		626	
1	EA	DELAYED EGRESS MAG (DOUBLE)	M490DEP-2 12/24 VDC (VIA VARIANCE)		628	SCE
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	KEY SWITCH, SPDT	653-04 L2 12/24 VDC (CORRIDOR)		630	SCE
1	EA	MOTION SENSOR	SCANII 12/24 VDC (VESTIBULE)		BLK	SCE
1	EA	POWER SUPPLY	PS902 FA900 120/240 VAC		LGR	SCE

DOOR NORMALLY LOCKED ON PUSH/EGRESS SIDE. PUSHING ON DOOR WILL ACTIVATE DELAYED EGRESS SYSTEM, SOUND INTERNAL ALARM, AND ALLOW FREE EGRESS IN 15 SECONDS. ENTERING VESTIBULE AND APPROACHING DOOR FROM PULL SIDE WILL TEMPORARILY UNLOCK DOOR AND ALLOW ENTRY INTO CORRIDOR VIA MOTION SENSOR. DELAYED EGRESS MAG LOCKS UNLOCK WITH LOSS OF POWER OR ACTIVATION OF FIRE ALARM.

Hardware Group No. 03

For use on Door #(s):
C125-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		628	IVE
2	EA	DUMMY PUSH BAR X PULL TRIM	330 X 990DT		626	VON
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN

Hardware Group No. 04

For use on Door #(s):
B303 G206

Provide each DE door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	224XY		628	IVE
2	EA	PUSH PLATE	8200 4" X 16"		630	IVE
2	EA	SURFACE CLOSER (W/ DEAD STOP)	4040XP CUSH		689	LCN
2	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
2	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 05

For use on Door #(s):
A203 A207 A210 A214 A218 A221

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC		626	SCH
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 06

For use on Door #(s):
C135 C138 C215 D118 D122 D127
D207

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC		626	SCH
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 07

For use on Door #(s):
G212

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC		626	SCH
1	EA	SURFACE TRACK CLOSER (W/ STOP)	4040XPT BUMP (PULL SIDE)		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MOP PLATE	8400 4"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 08

For use on Door #(s):

B104	B111	C128	C129	C203	C210
C212	C219	D203	D210	D215	D222

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC		626	SCH
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MOP PLATE	8400 4"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 09

For use on Door #(s):
C104

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	HOSPITAL PRIVACY W/ OUTSIDE INDICATOR	ND44S RHO OS-OCC		626	SCH
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 10

For use on Door #(s):
C111-2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	410S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 11

For use on Door #(s):
C106 D103

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	FLOOR STOP	FS439		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 12

For use on Door #(s):

G210-1	G210-2	G218-1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 13

For use on Door #(s):

B103A	B108	B313	B314	B315	C107
C109	C111-1	C112	C113	C120	C121
C122	C124-1	C124-2	C130	F203	G209
G218-2	G220				

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 14

For use on Door #(s):
B308 C101-2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	410S		652	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630		689	LCN
1	EA	MOUNTING PLATE	4040XP-18TJ		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 15

For use on Door #(s):
C131 G223

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 16

For use on Door #(s):
C117 C119

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	ENTRANCE LOCK	ND53BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 17

For use on Door #(s):
C116

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM LOCK	ND70BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	410S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 18

For use on Door #(s):
C123

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM LOCK	ND70BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 19

For use on Door #(s):

C102	C103	C110	C114	D123

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM LOCK	ND70BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 20

For use on Door #(s):

A202	A206-1	A209	A212	A220	B205
B207	C133-1	C137-1	C202	C206-2	C209
C211	C213-1	C218	D113	D117	D120-1
D124	D202	D206-1	D209	D214	D221
G208	G213	G216	G221		

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	ND78BDC RHO IS-CRS		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 21

For use on Door #(s):

A204-1	A204-2	A208	A216	A219-1	A219-2
B110	B206-1	B206-2	C205	C206-1	C207
C214	C216-1	C216-2	D105-1	D105-2	D119-1
D119-2	D204-1	D204-2	D208	D217	D218-1
D218-2	D219				

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 22

For use on Door #(s):

A213	C134-1	C134-2	D104	D112	D125
G214	G217	G222	G224		

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 23

For use on Door #(s):
B102-1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC		630	VON
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)		BLK	SCE
1	EA	DESK MOUNT BUTTON	660-PB		628	SCE
1	EA	POWER SUPPLY	PS902 900-4RL 120/240 VAC		LGR	SCE

DOOR NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER, OR PUSH BUTTON AT RECEPTION DESK, RELEASES ELECTRIC STRIKE, ALLOWING ACCESS. DOOR REMAINS LOCKED WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 24

For use on Door #(s):
C101-1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	✓	630	VON
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	✓	LGR	SCE

DOOR NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER MOMENTARILY RELEASES ELECTRIC STRIKE, ALLOWING ACCESS. DOOR TO REMAIN LOCKED UPON LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 25

For use on Door #(s):
B103 C105

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	✓	630	VON
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	✓	LGR	SCE

DOOR NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER MOMENTARILY RELEASES ELECTRIC STRIKE, ALLOWING ACCESS. DOOR TO REMAIN LOCKED UPON LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 26

For use on Door #(s):
C136 D106

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO	626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING	626	
1	EA	OH STOP	410S	652	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630	689	LCN
1	EA	MOUNTING PLATE	4040XP-18TJ	689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 27

For use on Door #(s):
C115 D107

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER (W/ DEAD STOP)	4040XP CUSH		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 28

For use on Door #(s):
C217 D205

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE TRACK CLOSER (W/ STOP)	4040XPT BUMP (PULL SIDE)		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 29

For use on Door #(s):
A211 A217 D128 G207

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM LOCK	ND80BDC RHO		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 30

For use on Door #(s):
B316 D109

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM W/DEADBOLT W/ OUTSIDE INDICATOR	L9480BDC 06B L583-363 OS-OCC		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER (W/ DEAD STOP)	4040XP CUSH		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MOP PLATE	8400 4"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 31

For use on Door #(s):
C208 D220

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM W/DEADBOLT W/ OUTSIDE INDICATOR	L9480BDC 06B L583-363 OS-OCC		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE TRACK CLOSER (W/ STOP)	4040XPT BUMP (PULL SIDE)		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MOP PLATE	8400 4"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

FOR OPENINGS WITH EXISTING FRAMES: VERIFY EXISTING HINGE TYPE/PREPS AND PROVIDE HINGES THAT EXISTING PREPS ACCOMMODATE. PREP EXISTING FRAME ACCORDINGLY FOR NEW SPECIFIED HARDWARE. PROVIDE FILLERS/PLATES AS NECESSARY TO FILL/COVER UNUSED OR EXPOSED EXISTING PREPS.

Hardware Group No. 32

For use on Door #(s):
A205 G219

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	STOREROOM W/DEADBOLT W/ OUTSIDE INDICATOR	L9480BDC 06B L583-363 OS-OCC		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MOP PLATE	8400 4"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 33

For use on Door #(s):
A206-2 A215 C204 C213-2 D206-2 D216

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	INSTITUTION LOCK	ND82BDC RHO		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	450S		652	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 34

For use on Door #(s):
B102-2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	INSTITUTION LOCK	ND82BDC RHO		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	✓	630	VON
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	WALL STOP	WS406/407CVX		630	IVE
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
1	EA	DESK MOUNT BUTTON	660-PB	✓	628	SCE
1	EA	POWER SUPPLY	PS902 900-4RL 120/240 VAC	✓	LGR	SCE

DOOR NORMALLY CLOSED AND LOCKED IN BOTH DIRECTIONS. PRESENTING VALID CREDENTIAL TO READER ON EITHER SIDE, OR PUSH BUTTON AT RECEPTION DESK, WILL RELEASE ELECTRIC STRIKE ALLOWING ACCESS. ELECTRIC STRIKE REMAINS LOCKED WITH LOSS OF POWER.

Hardware Group No. 35

For use on Door #(s):
ST3

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	224XY		628	IVE
1	EA	PANIC HARDWARE	99-L-BE-06		626	VON
1	EA	SURFACE CLOSER (W/ DEAD STOP)	4040XP CUSH		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 36

For use on Door #(s):
D102-1 D102-2 D110-1 D110-2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	224XY		628	IVE
1	EA	PANIC HARDWARE	CDSI-99-L-NL-06		626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH		689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 37

For use on Door #(s):
D131

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	PANIC HARDWARE	LD-99-NL		626	VON
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER			B/O
1	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA		AA	ZER
1	EA	THRESHOLD, 1/2"	655A		A	ZER
1	EA	DOOR CONTACT	679 SERIES		BLK	SCE

Hardware Group No. 38

For use on Door #(s):
B109

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY EPT		628	IVE
1	EA	POWER TRANSFER	EPT10	✓	689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-NL 24 VDC	✓	626	VON
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER			B/O
1	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA		AA	ZER
1	EA	THRESHOLD, 1/2"	655A		A	ZER
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
1	EA	DOOR CONTACT	679 SERIES	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC	✓	LGR	SCE

DOOR(S) NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH, ALLOWING ACCESS. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 39

For use on Door #(s):
B101-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	✓	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	ELEC PANIC HARDWARE	LX-RX-QEL-99-NL 24 VDC	✓	626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-DT 24 VDC	✓	626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS 120 VAC	✓	689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
2	EA	ACTUATOR	8310-818T (JAMB MOUNT)		630	LCN
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
2	EA	DOOR CONTACT	679 SERIES	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-4RL 120/240 VAC	✓	LGR	SCE

DOOR(S) NORMALLY CLOSED AND LOCKED AND EXTERIOR ACTUATOR DISABLED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH AND ENABLES EXTERIOR ACTUATOR. PUSHING ENABLED EXTERIOR ACTUATOR SIGNALS AUTOMATIC OPERATOR TO OPEN DOOR. INTERIOR ACTUATOR ENABLED AT ALL TIMES. PUSHING INTERIOR ACTUATOR RETRACTS LATCH AND SIGNALS AUTOMATIC OPERATOR TO OPEN DOOR. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 40

For use on Door #(s):
B101-1

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	✓	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	ELEC PANIC HARDWARE	LX-RX-QEL-99-NL 24 VDC	✓	626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-DT 24 VDC	✓	626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS 120 VAC	✓	689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	WEATHER RING	8310-801			LCN
1	EA	ACTUATOR	8310-818T (VESTIBULE, JAMB MOUNT)		630	LCN
1	EA	ACTUATOR	8310-853T (EXTERIOR, WALL MOUNT)		630	LCN
1	EA	MOUNT BOX	8310-867S			LCN
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER			B/O
2	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA		AA	ZER
1	EA	THRESHOLD, 1/2"	655A		A	ZER
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
2	EA	DOOR CONTACT	679 SERIES	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-4RL 120/240 VAC	✓	LGR	SCE

DOOR(S) NORMALLY CLOSED AND LOCKED AND EXTERIOR ACTUATOR DISABLED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH AND ENABLES EXTERIOR ACTUATOR. PUSHING ENABLED EXTERIOR ACTUATOR SIGNALS AUTOMATIC OPERATOR TO OPEN DOOR. INTERIOR ACTUATOR ENABLED AT ALL TIMES. PUSHING INTERIOR ACTUATOR RETRACTS LATCH AND SIGNALS AUTOMATIC OPERATOR TO OPEN DOOR. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 41

For use on Door #(s):
C125-1

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	✓	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-DT 24 VDC	✓	626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-NL 24 VDC	✓	626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER			B/O
2	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA		AA	ZER
1	EA	THRESHOLD, 1/2"	655A		A	ZER
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
2	EA	DOOR CONTACT	679 SERIES	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC	✓	LGR	SCE

DOOR(S) NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH, ALLOWING ACCESS. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 42

For use on Door #(s):
F202-1 F202-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	224XY		628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE	CD-99-DT		626	VON
1	EA	PANIC HARDWARE	CD-99-NL		626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)		626	SCH
2	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)		626	SCH
4	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH		689	LCN
2	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS		630	IVE
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
2	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 43

For use on Door #(s):
G215-1

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	✓	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-DT 24 VDC	✓	626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-NL 24 VDC	✓	626	VON
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)		626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)		626	SCH
2	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER			B/O
2	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA		AA	ZER
1	EA	THRESHOLD, 1/2"	655A		A	ZER
1	EA	CREDENTIAL READER	MT SERIES - BY ACCESS CONTROL INTEGRATOR (COORDINATE W/ HEAD END AND CREDENTIAL TYPE)	✓	BLK	SCE
2	EA	DOOR CONTACT	679 SERIES	✓	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC	✓	LGR	SCE

DOOR(S) NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH, ALLOWING ACCESS. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 44

For use on Door #(s):

A201-1	C132	C201	D201-1	D201-2	F101-1
F201-1	G201				

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	DOOR CORD	788C-18 (MOUNT HIGH ON DOOR)		626	SCE
1	EA	ELEC PANIC HARDWARE	RX-QEL-9927-DT-LBR 24 VDC		626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-9927-NL-LBR 24 VDC		626	VON
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)		626	SCH
1	EA	PERMANENT CORE	BY OWNER OR EXISTING		626	
2	EA	ELEC HOLD OPEN DEVICE	EXISTING			EXI
1	EA	POWER SUPPLY	PS902 900-2RS-FA 120/240 VAC		LGR	SCE

EXIT DEVICE LATCH CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER OR WITH ACTIVATION OF FIRE ALARM. DOORS DOORS CAPABLE OF BEING HELD OPEN BY ELEC HOLDERS (EXISTING). DOORS CLOSE AND LATCH WITH ACTIVATION OF FIRE ALARM OR LOSS OF POWER. DOORS CAN ALSO BE MANUALLY RELEASED FROM ELEC HOLDERS. FREE EGRESS AT ALL TIMES.

Hardware Group No. 45

For use on Door #(s):

D101-1	D101-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	DOOR CORD	788C-18 (MOUNT HIGH ON DOOR)		626	SCE
2	EA	LATCH RETRACTION KIT	QEL KIT			VON
2	EA	SWITCH	SWITCH KIT-RX			VON
2	EA	ELEC HOLD OPEN DEVICE	EXISTING			EXI
1	EA	POWER SUPPLY	PS902 900-2RS-FA 120/240 VAC		LGR	SCE

EXIT DEVICE LATCH CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER OR WITH ACTIVATION OF FIRE ALARM. DOORS DOORS CAPABLE OF BEING HELD OPEN BY ELEC HOLDERS (EXISTING). DOORS CLOSE AND LATCH WITH ACTIVATION OF FIRE ALARM OR LOSS OF POWER. DOORS CAN ALSO BE MANUALLY RELEASED FROM ELEC HOLDERS. FREE EGRESS AT ALL TIMES.

Hardware Group No. CE1

For use on Door #(s):
C259 C261-1 C262-1 C265A-1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1			REUSE EXISTING HARDWARE			

Hardware Group No. CE2

For use on Door #(s):
C261-2 C262-2 C264-2

Provide each SL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	SFIC MORTISE CYL.	80-110 AS REQ'D		626	SCH
1	EA	SFIC EVEREST CORE	80-037 AS REQ'D		626	SCH
		NOTE	BALANCE OF HARDWARE BY DOOR MFG			

Hardware Group No. CE3

For use on Door #(s):
C263-1 C263-2

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		628	IVE
1	EA	EXIT INDICATOR	4089		628	ADA
1	SET	DEADBOLT	MS1850/1/2 S/W X 4015 X 4016 X 4085		628	ADA
1	EA	THUMB TURN CYLINDER	4066		628	ADA
1	EA	SFIC MORTISE CYL.	80-110		626	SCH
1	EA	SFIC EVEREST CORE	80-037		626	SCH
2	EA	PUSH/PULL BAR	9190EZHD-10"-NO		630-316	IVE
2	EA	SURFACE CLOSER (W/ STOP)	4040XP SCUSH		689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30 SRT		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN

Hardware Group No. CE4

For use on Door #(s):
C263A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	PASSAGE SET	L9010 17B		626	SCH
1	EA	OH STOP & HOLDER	100F		630	GLY

Hardware Group No. CE5

For use on Door #(s):
C263B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	L9071BDC 17B IS-LOC		626	SCH
2	EA	SFIC EVEREST CORE	80-037		626	SCH
1	EA	SURFACE CLOSER (W/ STOP)	4040XP SCUSH		689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. CE6

For use on Door #(s):
C263C

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CONST LATCHING BOLT	FB51T/FB61T (AS REQ'D)		630	IVE
1	EA	STOREROOM LOCK	L9080BDC 17B		626	SCH
1	EA	SFIC EVEREST CORE	80-037		626	SCH
2	EA	OH STOP & HOLDER	100F		630	GLY
2	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. CE7

For use on Door #(s):
C264-1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)		652	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	L9071BDC 17B IS-LOC		626	SCH
2	EA	SFIC EVEREST CORE	80-037		626	SCH
1	EA	WALL STOP	WS406/407CVX		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. CE8

For use on Door #(s):
C265

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	L9071BDC 17B IS-LOC		626	SCH
2	EA	SFIC EVEREST CORE	80-037		626	SCH
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	WALL STOP	WS406/407CVX		626	IVE

Hardware Group No. EX.PR

For use on Door #(s):

A201-2	C126	E101	E102-1	E102-2	E102-3
E103	F101-2	F109	F110	F114	F201-2
F206-2	G205				

Provide each PR door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL HARDWARE EXISTING TO REMAIN.

Hardware Group No. EX.SGL

For use on Door #(s):

B302	B304	B305	B306	B310	B312
C133-2	C137-2	D001	D002	D004-1	D004-2
D005	D006	D007	D008	D115	D116
D120-2	D126	D212	D213	E585	F102-1
F102-2	F103	F106	F107	F111	F115
F116	F205	F206-1	F206-3	F207-1	F207-2
F208	F210-1	F210-2	F210-3	F212	F213
F214	F216	F217	G202-1	G202-2	G203
G204-1	G204-2	ST1-1	ST1-2	ST1-3	ST1-4
ST2-1	ST2-2				

Provide each SGL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL HARDWARE EXISTING TO REMAIN.

END OF SECTION

SECTION 12 35 57 - PLASTIC-LAMINATE-CLAD LABORATORY CASEWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section Includes:

1. Plastic-laminate laboratory casework.
2. Utility-space framing at backs of base cabinets.
3. Filler and closure panels.
4. Laboratory accessories.
5. Water, laboratory gas, and electrical service fittings.
6. Laboratory dishwasher.

1.02 DEFINITIONS

A. Exposed Surfaces of Casework: Surfaces visible when doors and drawers are closed, including bottoms of cabinets more than 48 inches (1200 mm) above floor, and visible surfaces in open cabinets or behind glass doors.

1. Ends of cabinets, including those installed directly against walls or other cabinets, are defined as "exposed."
2. Ends of cabinets indicated to be installed directly against and completely concealed by walls or other cabinets are defined as "concealed."

B. Semi-exposed Surfaces of Casework: Surfaces behind opaque doors, such as cabinet interiors, shelves, and dividers; interiors and sides of drawers; and interior faces of doors. Tops of cases 78 inches (1980 mm) or more above floor and bottoms of cabinets more than 24 inches (600 mm) but less than 48 inches (1200 mm) above floor are defined as "semi-exposed."

C. Concealed Surfaces of Casework: Include sleepers, web frames, dust panels, and other surfaces not usually visible after installation.

D. MDF: Medium-density fiberboard.

E. Hardwood Plywood: A panel product composed of layers, or plies, of veneer, or of veneers in combination with lumber core, hardboard core, MDF core, or particleboard core, joined with adhesive and faced both front and back with hardwood veneers.

1.03 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

B. Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying requirements.

1.04 COORDINATION

A. Coordinate layout and installation of framing and reinforcements for support of laboratory casework.

B. Coordinate installation of laboratory casework with installation of fume hoods and other laboratory equipment.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For laboratory casework. Include plans, elevations, and attachment details.

1. Indicate types and sizes of cabinets.
2. Indicate locations of hardware and keying of locks.
3. Indicate locations and types of service fittings.
4. Indicate locations of blocking and reinforcements required for installing laboratory casework.
5. Include details of utility spaces showing supports for conduits and piping.
6. Include details of exposed conduits, if required, for service fittings.
7. Indicate locations of and clearances from adjacent walls, doors, windows, other building components, and other laboratory equipment.
8. Include coordinated dimensions for laboratory equipment specified in other Sections.

C. Keying Schedule: Include schematic keying diagram, and index each key set to unique designations that are coordinated with the Contract Documents.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports for Casework: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory casework with requirements of specified product standard and system structural performance specified in "Performance Requirements" Article.

C. Product Test Reports for Countertop Surface Material: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory countertop surface materials with requirements specified for chemical and physical resistance.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that produces casework of types indicated for this Project that has been tested for compliance with SEFA 8 W.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces during handling and installation with protective covering of polyethylene film or other suitable material.

1.09 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install laboratory casework until building is enclosed, utility roughing-in and wet work are complete and dry, and temporary HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Locate concealed framing, blocking, and reinforcements that support casework by field measurements before being enclosed, and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Stevens Industries, Inc.
2. TMI Systems Design Corporation.
3. Advanced Cabinet Systems
4. Case Systems

B. Source Limitations: Obtain laboratory casework from single source from single manufacturer unless otherwise indicated.

C. Product Designations: Drawings indicate sizes and configurations of laboratory casework by referencing designated manufacturer's catalog numbers. Other manufacturers' laboratory casework of similar sizes and similar door and drawer configurations and complying with Specifications may be considered. See Section 016000 "Product Requirements."

2.02 PERFORMANCE REQUIREMENTS

A. System Structural Performance: Laboratory casework and support framing system shall withstand the effects of the following gravity loads and stresses without permanent deformation, excessive deflection, or binding of drawers and doors:

1. Support Framing System: 600 lb/ft. (900 kg/m).
2. Suspended Base Cabinets (Internal Load): 160 lb/ft. (240 kg/m).
3. Work Surfaces (Including Tops of Suspended Base Cabinets): 160 lb/ft. (240 kg/m).
4. Wall Cabinets (Upper Cabinets): 160 lb/ft. (240 kg/m).
5. Shelves: 40 lb/sq. ft. (200 kg/sq. m).

B. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design laboratory casework, including attachments to other work.

C. Seismic Performance: Laboratory casework and support framing system, including attachments to other work, shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

2.03 CASEWORK, GENERAL

A. Casework Product Standard: Comply with SEFA 8 PL, "Laboratory Grade Plastic Laminate Casework."

B. Flammable Liquid Storage: Where cabinets are indicated for solvent or flammable liquid storage, provide units that are listed and labeled as complying with requirements in NFPA 30 by a testing and inspecting agency acceptable to authorities having jurisdiction.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.04 PLASTIC-LAMINATE CABINETS

A. Design: Reveal overlay with square edges.

1. Provide 1/8-inch (3.2-mm) reveals between doors and drawers that are adjacent.

B. Grain Direction for Wood Grain Plastic Laminate:

1. Vertical on both doors and drawer fronts, with continuous vertical matching.
2. Vertical on doors, horizontal on drawer fronts.
3. Lengthwise on face frame members.
4. Vertical on end panels.
5. Side to side on bottoms and tops of units.
6. Vertical on knee-space panels.
7. Horizontal on aprons.

C. Exposed Materials:

1. Plastic-Laminate Grade: VGS.

a. Colors and Patterns: As selected from manufacturers standard laminates, unless noted otherwise on Drawings.

2. Unless otherwise indicated, provide specified edge banding on all exposed edges.
3. Solid Wood: Clear hardwood lumber of species indicated, selected for compatible grain and color.

D. Semi-exposed Materials:

1. Plastic Laminate: Grade CLS unless otherwise indicated. Provide plastic laminate for semi-exposed surfaces unless otherwise indicated.

a. Colors: As selected from manufacturers standard laminates.
b. Provide plastic laminate of same grade as exposed surfaces for interior faces of doors and drawer fronts and other locations where opposite side of component is exposed.

2. Thermoset Decorative Panels: Provide thermoset decorative panels for semi-exposed surfaces unless otherwise indicated.

a. Colors: As selected from manufacturers standard laminates.

b. Provide plastic laminate of same grade as exposed surfaces for interior faces of doors and drawer fronts and other locations where opposite side of component is exposed.

3. Solid Wood: Sound hardwood lumber, selected to eliminate appearance defects.
4. Plywood: Hardwood plywood. Grade B faces and Grade J crossbands. Provide backs of same species as faces.
5. Metal for Steel Drawer Pans: Cold-rolled, carbon-steel sheet complying with ASTM A 1008/A 1008M; matte finish; suitable for exposed applications.

E. Concealed Materials:

1. Solid Wood: Any species, with no defects affecting strength or utility.
2. Plywood: Hardwood plywood.
3. Plastic Laminate: Type BKL.
4. Particleboard.
5. MDF.
6. Hardboard.

2.05 PLASTIC-LAMINATE CABINET MATERIALS

A. Hardwood Plywood: HPVA HP-1, particleboard core except where veneer core is indicated, and made without urea formaldehyde.

B. MDF: ANSI A208.2, Grade 130,; made with binder containing no urea formaldehyde.

C. Particleboard: ANSI A208.1, Grade M-2; made with binder containing no urea formaldehyde.

D. Hardboard: ANSI A135.4, Class 1 Tempered.

E. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3 and SEFA 8.0.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ABET Inc.
b. Arborite; a division of ITW Canada.
c. Formica Corporation.
d. Lamin-Art, Inc.
e. Panolam Industries International.
f. Wilsonart International; Div. of Premark International, Inc.

F. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

G. Edge banding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.

1. Colors: As selected by Architect from manufacturer's full range.

H. Edge banding for Thermoset Decorative Panels: PVC or polyester edge banding matching thermoset decorative panels.

2.06 AUXILIARY CABINET MATERIALS

A. Acid Storage-Cabinet Lining: 1/4-inch- (6-mm-) thick, glass-fiber cement board complying with ASTM C 1186.

B. Glass for Glazed Doors: Clear tempered glass complying with ASTM C 1048, Kind FT, Condition A, Type I, Class 1, Quality-Q3; not less than 5.0 mm thick.

2.07 LABORATORY CASEWORK SYSTEM

A. Provide casework manufacturer's standard integrated system that includes support framing, suspended modular wood cabinets, filler and closure panels, wall panels, countertops, and fittings needed to assemble system. System includes hardware and fasteners for securing support framing to permanent construction.

1. Cabinets can be removed and reinstalled without use of special tools for relocation within system.
2. Base cabinets can be removed without providing temporary support for, or removing, countertops.
3. Sinks are supported independent of base cabinets.
4. Support framing has provision for fastening pipe supports at utility space in not more than 1-inch (25-mm) increments.
5. System includes filler and closure panels to close spaces between support framing, cabinets, shelves, countertops, floors, and walls unless otherwise indicated. Fabricate from same material and with same finish as adjacent exposed cabinet surfaces unless otherwise indicated.

B. Support Framing: Casework manufacturer's standard system consisting of vertical supports and connecting braces and rails as follows:

1. Cabinets, shelves, and countertops are supported from vertical supports except where floor-supported base cabinets are indicated. Vertical positioning of supported cabinets, shelves, and countertops can be varied in 1-inch (25-mm) increments through full height of supports.
2. Vertical supports rest on adjustable leveling bases and are secured to floor with metal clips fastened to floor.
3. Vertical supports are installed with braces and rails, connecting them to each other and to permanent building walls to create a stable, rigid structure with framed utility spaces where indicated.
4. Vertical supports are braced at floor with cantilevered horizontal leg members where indicated.

C. Countertops: Provide in modular lengths indicated, without seams.

2.08 FABRICATION

A. Construction: Provide plastic-laminate laboratory casework of the following minimum construction:

1. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch- (19-mm-) thick particleboard.
2. Shelves: 3/4-inch- (19-mm-) thick plywood.
3. Exposed Backs of Cabinets: 1/2-inch- (12.7-mm-) thick particleboard or MDF.
4. Backs of Cabinets: 1/4-inch (6.4-mm) veneer-core hardwood plywood dadoed into sides, bottoms, and tops where not exposed, unless otherwise indicated.
5. Drawer Fronts: 3/4-inch- (19-mm-) thick particleboard.
6. Drawer Sides and Backs: 1/2-inch (12.7-mm) solid-wood or veneer-core hardwood plywood, with glued dovetail or multiple-dowel joints.
7. Drawer Bottoms: 1/4-inch (6.4-mm) particleboard or MDF glued and dadoed into front, back, and sides of drawers. Use 1/2-inch (12.7-mm) material for drawers more than 24 inches (600 mm) wide.
8. Doors: 3/4 inch (19 mm) thick, with particleboard or MDF cores and solid-wood stiles and rails.
9. Stiles and Rails of Glazed Doors: 3/4 inch (19 mm) thick, with particleboard cores.

B. Utility-Space Framing: Steel framing units consisting of two steel slotted channels complying with MFMA-4, not less than 1-5/8 inches (41 mm) square by 0.105-inch (2.66-mm) nominal thickness, and connected at top and bottom by U-shaped brackets made from 1-1/4-by-1/4-inch (32-by-6-mm) steel flat bars. Framing units may be made by welding specified channel material into rectangular frames instead of using U-shaped brackets.

C. Removable Backs: Provide backs that can be removed from within cabinets at utility spaces.

D. Filler and Closure Panels: Provide where indicated and as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as adjacent exposed cabinet surfaces unless otherwise indicated.

1. Provide knee-space panels (modesty panels) at spaces between base cabinets, where cabinets are not installed against a wall or where space is not otherwise closed.
2. Provide utility-space closure panels at spaces between base cabinets where utility space would otherwise be exposed, including spaces below countertops.
3. Provide closure panels at ends of utility spaces where utility space would otherwise be exposed.

2.09 HARDWARE

A. General: Provide laboratory casework manufacturer's standard, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.

B. Butt Hinges: Stainless-steel, five-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide two for doors 48 inches (1200 mm) high or less and three for doors more than 48 inches (1200 mm) high.

C. Hinged Door and Drawer Pulls: Stainless-steel back-mounted pulls. Provide two pulls for drawers more than 24 inches (600 mm) wide.

1. Design: As selected from manufacturer's full range.
2. Overall Size: As indicated.

D. Door Catches: Dual, self-aligning, permanent magnet catches. Provide two catches on doors more than 48 inches (1200 mm) high.

E. Drawer Slides: Side mounted, epoxy-coated steel, self-closing; designed to prevent rebound when drawers are closed; complying with BHMA A156.9, Type B05091.

1. Provide Grade 1HD-100; for drawers not more than 6 inches (150 mm) high and 24 inches (600 mm) wide.
2. Provide Grade 1HD-100; for drawers more than 6 inches (150 mm) high or 24 inches (600 mm) wide.
3. Standard Duty (Grade 1): Full-extension type, with polymer rollers.
4. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Full-extension, ball-bearing type.

F. Drawer Slides: Hardwood runners under centers of drawers with polymer guides fastened to backs of drawers.

G. Label Holders: Stainless steel, aluminum, or chrome plated; sized to receive standard label cards approximately 1 by 2 inches (25 by 50 mm), attached with screws or rivets. Provide on all drawers.

H. Locks: Cam type with five-pin tumbler, brass with chrome-plated finish; complying with BHMA A156.11, Type E07281.

1. Provide a minimum of two keys per lock and two master keys.
2. Provide on all drawers and cabinet doors.
3. Keying: Key locks as directed.
4. Master Key System: Key all locks to be operable by master key.

I. Adjustable Shelf Supports: Powder-coated steel shelf rests complying with BHMA A156.9, Type B04013.

J. Adjustable Shelf Supports: Mortise-type, powder-coated steel standards and shelf rests complying with BHMA A156.9, Type B04071 and Type B04091.

K. Adjustable Wall Shelf Supports: Surface-type steel standards and steel shelf brackets, with epoxy powder-coated finish, complying with BHMA A156.9, Type B04102 and Type B04112.

2.10 LABORATORY ACCESSORIES

A. Reagent Shelves: Provide as indicated, fabricated from same material as adjacent countertop unless otherwise indicated.

B. Burette Rods: Aluminum or stainless-steel rods, 1/2 inch (13 mm) in diameter and 18 inches (450 mm) long, threaded on one end to fit tapered plug adapter for flush socket receptacle. Provide with tapered plug adapter and receptacle.

C. Upright Rod Assembly and Metal Crossbar: Aluminum or stainless steel. Two vertical rods and one horizontal crossbar, 3/4 inch (19 mm) in diameter and 36 inches (900 mm) long unless otherwise indicated; two flush socket receptacles and two crossbar clamps. Ends of vertical rods are tapered to fit receptacles; all other rod ends are rounded.

D. Greenlaw Arm Assembly: Aluminum or stainless-steel vertical rod, tapered on one end to fit flush socket receptacle. Adjustable crossbar of hardwood with black, acid-resistant finish, secured to upright with adjustable clamp. Provide with receptacle.

E. Lattice Assembly: Aluminum or stainless-steel, vertical and horizontal rod lattice assembly with 3/4-inch- (19-mm-) diameter rods at approximately 12 inches (300 mm) o.c. with two flush socket receptacles for mounting.

1. Size: As indicated on Drawings.

F. Sanitizing Goggle cabinet with minimum 40 goggles. Provide one per lab or as indicated in drawings. Unit shall be equal to model listed on drawings.

G. Fire Blankets (1 per lab) or as indicated in drawings.

H. First Aid Kits (1 per lab) or as indicated in drawings.

2.11 WATER AND LABORATORY GAS SERVICE FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Broen Inc.; Distributed by Laboratory Enterprises, a Watts Water Technologies company.
2. Chicago Faucets; a Geberit company.
3. WaterSaver Faucet Company.
4. Architect approved equivalent.

B. Service Fittings: Provide units that comply with SEFA 7, "Laboratory and Hospital Fixtures - Recommended Practices." Provide fittings complete with washers, locknuts, nipples, and other installation accessories. Include wall and deck flanges, escutcheons, handle extension rods, and similar items.

1. Provide units that comply with "Vandal-Resistant Faucets and Fixtures" recommendations in SEFA 7.

C. Materials: Fabricated from cast or forged red brass unless otherwise indicated.

1. Reagent-Grade Water Service Fittings: Polypropylene, PVC, or PVDF for parts in contact with water.

D. Finish: Acid- and solvent-resistant powder coating complying with requirements in SEFA 7 for corrosion-resistant finishes.

1. Provide chemical-resistant powder coating in laboratory casework manufacturer's standard metallic brown, aluminum, white, or other color as approved by Architect.

E. Water Valves and Faucets: Provide units complying with ASME A112.18.1, with renewable seats, designed for working pressure up to 80 psig (550 kPa).

1. Vacuum Breakers: Provide ASSE 1035 vacuum breakers on water fittings with serrated outlets.
2. Aerators: Provide aerators on water fittings that do not have serrated outlets.
3. Self-Closing Valves: Provide self-closing valves where indicated.

F. Ball Valves: Chrome-plated ball and PTFE seals. Handle requires no more than 5 lbf (22 N) to operate. Provide units designed for working pressure up to 75 psig (520 kPa), with serrated outlets.

1. Where ball valves are indicated for fuel-gas use, provide locking safety handles that must be pushed in before being turned on unless otherwise indicated.

G. Ground-Key Cocks: Tapered core and handle of one-piece forged brass, ground and lapped, and held in place under constant spring pressure. Provide units designed for working pressure up to 40 psig (280 kPa), with serrated outlets.

H. Steam Valves: Stainless-steel seat and PTFE seat disc. Provide units designed for steam working pressure up to 20 psig (140 kPa), with serrated outlets.

I. Needle Valves: Provide units with renewable, self-centering, floating cones and renewable seats of stainless steel or Monel metal, with removable serrated outlets.

1. Provide units designed for working pressure up to 100 psig (690 kPa).

J. Hand of Fittings: Furnish right-hand fittings unless fitting designation is followed by "L."

K. Remote-Control Valves: Provide needle valves, straight-through or angle type as indicated for fume hoods and where indicated.

L. Handles: Provide three- or four-arm, forged-brass handles for valves unless otherwise indicated.

1. Provide lever-type handles for ground-key cocks. Lever handle aligns with outlet when valve is closed and is perpendicular to outlet when valve is fully open.
2. Provide lever-type handles for ball valves unless otherwise indicated. Lever handle aligns with outlet when valve is closed and is perpendicular to outlet when valve is fully open.
3. Provide heat-resistant plastic handles for steam valves.
4. Provide knurled, molded-plastic handles for needle valves.

M. Service-Outlet Identification: Provide color-coded plastic discs with embossed identification, secured to each service-fitting handle to be tamper resistant. Comply with SEFA 7 for colors and embossed identification.

2.12 ELECTRICAL SERVICE FITTINGS

A. Service Fittings, General: Provide units complete with metal housings, receptacles, switches, pilot lights, voice and data communication outlets, cover plates, accessories, and gaskets required for mounting on laboratory casework.

1. Receptacles, switches, pilot lights, cover plates, and accessories are specified in Section 262726 "Wiring Devices."
2. Voice and data communication outlets are specified in Section 271500 "Communication Horizontal Cabling."

B. Receptacles: Comply with NEMA WD 1, NEMA WD 6, and UL 498. Duplex type, Configuration 5 20R.

1. Receptacle Grade: General grade unless otherwise indicated.
2. Color of Receptacles: As selected by Architect unless otherwise indicated or required by NFPA 70.
3. GFCI Receptacles: Straight blade, feed-through type. Comply with UL 943, Class A, General grade, and include indicator light that is illuminated when device is tripped.
4. TVSS (Transient Voltage Surge Suppressor) Receptacles: Comply with UL 1449, with integral TVSS in line to ground, line to neutral, and neutral to ground.

    a. TVSS Components: Multiple metal-oxide varistors; with a nominal clamp-level rating of 400 V and a minimum single transient pulse energy dissipation of 240 J, according to IEEE C62.41.2 and IEEE C62.45.
    b. Active TVSS Indication: Visual and audible, with light visible in face of device to indicate device is "active" or "no longer in service."
    c. Receptacle Type: General grade, with isolated-ground terminal.
    d. Identification: Distinctive marking on face of device to denote TVSS-type unit.
    e. Color of TVSS Receptacles: Blue.

C. Switches: Comply with NEMA WD 1 and UL 20. Provide single-pole, double-pole, or three-way switches as required; rated 120 to 277-V ac; and in amperage capacities to suit units served.

1. Color of Switches: As selected by Architect unless otherwise indicated or required by NFPA 70.
2. Provide pilot light adjacent to switch or neon-lighted handle, illuminated when switch is on, where noted as "PL" next to switch identification.
3. Provide key-operated switch where noted as "KEY" next to switch identification.
4. Provide thermal-overload switches, single or double pole, as required, with maximum overcurrent trip setting to suit particular motor controlled.

D. Voice and Data Communication Outlets: Two RJ-45 jacks for terminating 100-ohm, balanced, four-pair UTP; TIA/EIA-568-B.1; complying with Category 5e. Comply with UL 1863.

E. Cover Plates: Provide satin finish, Type 304, stainless-steel cover plates with formed, beveled edges.

F. Cover-Plate Identification: Use 1/4-inch- (6-mm-) high letters unless otherwise indicated. For stainless steel or chrome-plated metal, stamp or etch plate and fill in letters with black enamel.

1. Provide on all cover plates.

    a. Receptacles other than standard 125-V duplex, grounding type.
    b. Switches and thermal-overload switches.
    c. Pilot lights when located remotely from associated equipment or switch, where function is not obvious.
    d. Receptacles, switches, and other locations indicated.

2. Provide the following information:

    a. Voltage and phase for receptacles other than standard 125-V duplex, grounding type.

b. Indicate equipment being controlled by switches and thermal-overload switches.
c. Indicate equipment being controlled for pilot lights when located remotely from associated equipment or switch, where function is not obvious.
d. Number of the breaker in panelboard that controls device.

G. Pedestal-Type Fittings: Cast-aluminum housings with sloped single face or two faces, as indicated, with neoprene gasket under base and with concealed mounting holes in base for attaching to laboratory casework. Provide holes tapped for conduits.

H. Line-Type Fittings: Provide with cast-metal boxes with threaded holes for mounting on rigid steel conduit. Provide cover plates same size as boxes.

I. Recessed-Type Fittings: Provide with galvanized-steel boxes.

J. Finishes for Service-Fitting Components: Provide housings or boxes for pedestal- and line-type fittings with manufacturer's standard baked-on, chemical-resistant enamel in color as selected by Architect from manufacturer's full range.

2.13 LABORATORY DISHWASHER

A. Undercounter, high-temperature dishwasher.

B. Basis of Design: Blakeslee Undercounter High-Temp Dishwasher UC-18-3

C. Dimensions:

1. Width: 23-1/2 inches.
2. Depth: 24 inches.
3. Height: 33-1/4 inches.

D. Features:

1. Built-in 6.5 Kw booster
2. 2.7 Kw wash tank heater
3. Removable wash and rinse arms
4. 180-degree sanitizing rinse every cycle

E. Appliance color/finish: Stainless Steel

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of reinforcements, and other conditions affecting performance of the Work.

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

3.02 INSTALLATION OF CABINETS

A. Comply with installation requirements in SEFA 2.3. Install level, plumb, and true; shim as required, using concealed shims. Where laboratory casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical. Do not exceed the following tolerances:

1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet (1.5 mm in 3 m).
2. Variation of Bottoms of Upper Cabinets from Level: 1/8 inch in 10 feet (3 mm in 3 m).
3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet (3 mm in 3 m).
4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch (0.8 mm).
5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch (1.5 mm).

B. Utility-Space Framing: Secure to floor with two fasteners at each frame. Fasten to partition framing, wood blocking, or metal reinforcements in partitions and to base cabinets.

C. Base Cabinets: Fasten cabinets to utility-space framing, partition framing, wood blocking, or reinforcements in partitions, with fasteners spaced not more than 16 inches (400 mm) o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform.

1. Where base cabinets are installed away from walls, fasten to floor at toe space at not more than 24 inches (600 mm) o.c. and at sides of cabinets with not less than two fasteners per side.

D. Wall Cabinets: Fasten to hanging strips, masonry, partition framing, blocking, or reinforcements in partitions. Fasten each cabinet through back, near top, at not less than 16 inches (400 mm) o.c.

E. Install hardware uniformly and precisely. Set hinges snug and flat in mortises.

F. Adjust laboratory casework and hardware so doors and drawers align and operate smoothly without warp or bind and contact points meet accurately. Lubricate operating hardware as recommended by manufacturer.

3.03 INSTALLATION OF LABORATORY ACCESSORIES

A. Install accessories according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions.

B. Securely fasten adjustable shelving supports, stainless-steel shelves, and pegboards to partition framing, wood blocking, or reinforcements in partitions.

C. Install shelf standards plumb and at heights to align shelf brackets for level shelves. Install shelving level and straight, closely fitted to other work where indicated.

D. Securely fasten pegboards to partition framing, wood blocking, or reinforcements in partitions.

3.04 INSTALLATION OF SERVICE FITTINGS

A. Comply with requirements in other Sections for installing water and laboratory gas service fittings and electrical devices.

B. Install fittings according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions. Set bases and flanges of sink- and countertop-mounted fittings in sealant recommended by manufacturer of sink or countertop material. Securely anchor fittings to laboratory casework unless otherwise indicated.

3.05 CLEANING AND PROTECTING

A. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

B. Protect countertop surfaces during construction with 6-mil (0.15-mm) plastic or other suitable water-resistant covering. Tape to underside of countertop at a minimum of 48 inches (1200 mm) o.c.

END OF SECTION