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Frederick County Public Schools
Reach. Challenge. Prepare.

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ADDENDUM

May 22, 2020

ADDENDUM # 1
RFQ 20C15, Security Vestibules for Green Valley Elementary and Kemptown Elementary Schools
DUE DATE: Thursday, June 4, 2020, prior to and no later than 4:00 P.M. at
https://secure.procurenow.com/portal/fcps

This addendum is being issued to provide additions, corrections, clarifications and answers to certain questions raised referencing the original proposal packages and any resultant contracts for the above bid.

1. Clarification to Drawings - Door hardware electronics room locations:
    - Green Valley Elementary, the door hardware electronics connection point is in wiring room 122 off the Lounge.
    - Kemptown the door hardware electronics connection point is in server room B-136 off the TV Studio in the Library.

2. This Addendum includes the following attachment(s):
    a. Revised Specifications (76 pages)
    b. Revised Drawings (2 pages)

Thank you for your interest in bidding with Frederick County Public Schools and we apologize for any inconvenience this may have caused.

Sincerely,

Kim Miskell

Kim Miskell, CSBO
Assistant Purchasing Manager

KM/ab

cc: Tony Ray, Project Manager III, Construction Management

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Green Valley Elementary School, Monrovia Maryland 21770 & Kemptown Elementary School, Kemptown, Maryland 21770

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SECTION 01 10 00

GENERAL REQUIREMENTS

SECTION 01 10 00 - GENERAL REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY OF WORK

Furnish all labor, materials, equipment, and services necessary for, incidental to, the construction of a Security Vestibule at the interior of Green Valley & Kemptown Elementary Schools. All work shall be bid as lump sum as indicated on the drawing and specifications as prepared by FCPS. Work shall be coordinated with the Owner. Work is to be completed at a time frame dictated by the Owner's Representative when the area will be available for work. Work is further described as follows:

A. The existing school building consists of a single story structure.

Work includes removal of interior hollow metal doors/frames and windows and partial removal of non-bearing masonry walls as shown on the drawings. The new vestibule compartment will be constructed with 20 ga. metal studs, 5/8 fire board drywall and safety glazing systems and wood doors with borrowed lights in the doors. Work associated with secondary finishes systems such as minor modifications to gypsum board on metal studs, flooring, painting, and acoustical ceilings will also be included as required by the demolition work.

Work also includes installation of access control door hardware and associated security devices.

Additional Structural and Masonry work is not required.

B. All work is indicated on the contract documents and is limited to Architectural work with some minor Mechanical and Electrical work**.**

1. Contractor shall provide a detailed schedule of values for all work included in the project broken down by trade.

C. The Owner will continue to conduct limited operations in this facility during construction and renovation. The General Contractor shall coordinate all phasing aspects with the owner to ensure that existing public areas and egress components can be used to the greatest extent possible during construction operations, and to maintain building security.

1.2 LOCAL CONDITIONS

A. The contractor shall check, measure and verify all site conditions and be responsible for familiarizing themselves with the nature, extent and quantity of the work. Where drawings or specifications conflict with existing field conditions, Contractor shall

notify the Owner's Representative. The Owner will then give written directions and or clarifications on how to proceed.

B. The Contractor is responsible for verification of all utility locations and the repair of same if damaged during construction. The Contractor shall restore to the original condition all damages due to construction.

1.3 APPLICABLE CODES AND STANDARDS

A. All work shall conform to all applicable local, state or federal building codes, regulations and 2010 A.D.A. regulatory requirements.

1.4 INQUIRIES

A. All inquiries pertaining to this project shall be made to Mr. Brad Ahalt, Project Manager for FCPS Construct Management Dept, Frederick County Public Schools, phone 301-644-5164. Email: bradley.ahalt@fcps.org.

1. Mr. Brad Ahalt will serve as the Owner's Representative.

B. The site is available for inspection prior to bid by calling the Project Manager to make arrangements to coordinate a site visit that doesn't interfere with business activities.

1.5 OPENING

A. Proposals will be opened as announced in the "Invitation to Bid."

1.6 AWARD OF BID

A. The Contract will be awarded as stated in the "Instructions to Bidders."
In addition, Frederick County Public Schools reserves the right to accept or reject any or all proposals for any reason whatsoever and will not be responsible for any charges incurred by contractors.

1.7 SCHEDULE OF WORK

A. Demolition/construction work to begin on or about June ??, 2020 with substantial completion of base bid work by August 1, 2020. Final completion date of base bid work is August 15, 2020.

B. The contractor has full access to the building as necessary during the above timeline 7 days a week and as allowed by local ordinances. Once staff return for the fall term access will be restricted to comply with the instructional schedule.

C. FCPS is on 4 day 10 hour work week over the summer recess; there will be no staff on site Friday, Saturday or Sunday from mid-June to Mid-August however FCPS will make accommodations for access during those days as necessary.

1.8 LIQUIDATED DAMAGES

A. Liquidated damages in the amount of $475.00 per day for each calendar day beyond completion date of August 15, 2020 will be assessed by the Owner.

1.9 SPECIAL CONDITIONS

A. Asbestos- Containing Buildings:
Although, most Frederick County Public School buildings contain asbestos, it is not anticipated that any ACM's (Asbestos Containing Materials) will be encountered as part of this work. At the pre-construction meeting a detailed procedure of asbestos removal (should any be encountered in the building) will be given to the contractor.

B. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed. Use adequate but reasonable precautions to prevent the spread of dust, dirt and noise to adjacent areas.

1.10 PERMITS AND INSPECTIONS

A. If applicable, the Owner shall obtain and pay for the primary building permit for this project. However, the Contractor shall obtain and pay for all secondary trade permits and inspection fees required for all local, state or federal applicable codes.

B. The Contractor shall supply the Owner with a copy of all permits and inspection reports.

1.11 CUTTING AND PATCHING

A. Saw-Cut to fit, patch to match all existing surfaces which are cut for installation of new materials and equipment or the demolition of existing materials. No cutting or patching of utilities or other structures shall be done without the specific permission of the Owner.

1.12 PROJECT COORDINATION AND MEETINGS

A. Coordination: Coordinate activities included in various Sections to assure efficient and orderly installation of each component. Coordinate operations included under different Sections that are dependent on each other for proper installation and operation.

B. Meetings:

1. A pre-bid meeting will be held at the Kemptown Elementary and Green Valley Elementary Schools as described in the invitation for bids.

2. A pre-construction meeting will be held after the project is awarded and before construction begins.

3. Progress meetings will be held as deemed necessary by the Owner but not less than one meeting every two weeks.

1.13 SUBMITTALS

A. General: Coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, other submittals and related activities and as noted in other sections of these specifications. Transmit in advance of performance of related activities to avoid delay. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.

1. All submittals shall include, but not be limited to, name and address or contractor, name and address of subcontractor, name and address of supplier and name of manufacturer. If applicable all submittals shall show compliance with recognized trade association standards and recognized testing agency standards with appropriate labels and seals.

B. Shop Drawings: The Contractor shall submit for approval three (3) copies of shop drawings or submittals for all phases of construction and materials to be used.

C. Product Data: Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information.

D. Samples: Submit two (2) samples of each system component.

1.14 QUALITY CONTROL

A. Responsibilities: The Contractor is to provide inspections and tests specified or required by governing authorities, and as indicated in other sections of these specifications. Costs are included in the Contract.

B. Retesting: The Contractor is responsible for retesting where results prove unsatisfactory and do not indicate compliance with Contract Documents.

C. Coordination: The Contractor is responsible for scheduling inspections, tests, and similar activities.

D. Submittals: The Contractor shall submit a certified written report of each inspection and test in duplicate.

1.15 CONTRACTOR USE OF PREMISES

A. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.

B. Confine operations to areas within contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

C. Keep driveways and entrances clear at all times. Do not use these areas for parking or storage of materials. After completion date of August 1, 2020 no materials will be stored at the site.

D. Use of the Existing Building: Maintain the existing building in an operational condition throughout construction. Repair damage caused by construction operations. Take precautions necessary to protect the building and occupants during the construction period.

E. Full Owner Occupancy: The Owner will occupy the site and existing building during construction. Cooperate with the Owner to minimize conflicts and facilitate Owner usage. Perform the work so as not to interfere with the Owner's operations.

1.16 RECORD AND OPERATIONS & MAINTENANCE DATA

A. If not indicated in other parts of these specifications provide the following as indicated. Record Document Submittals, Record Drawings, Record Specifications, Maintenance Manuals, Operating and Maintenance Instructions and As-Built Drawings.

1. Record Document Submittals: Do not use Record Documents for construction purposes; protect from loss in a secure location; provide access to Record Documents for the Owner's reference.

2. Record Drawings: ("As-Builts") Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark-up these drawings to show the actual installation. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

a. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover.

3. Additional Record Drawings:
At the completion of the project, the Contractor shall obtain an AutoCAD drawing file (i.e. floor plan, site plan) from the Engineer and update the file from the "as-built" drawings. The updated AutoCAD file shall be returned to the Engineer for his review, then released to the Owner at the completion of the project.

4. Record Specifications: Maintain one copy of the Project Manual, including addenda. Mark to show variations in actual Work performed in comparison with the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record drawing information and Product Data.

5. Maintenance Manuals: Organize maintenance data into three (3) sets of manageable size. Bind in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. This shall include but is not limited to the following information:

   Emergency instructions.
   Spare parts list.
   Copies of warranties.
   Wiring diagrams.
   Inspection procedures.
   Shop Drawings and Product Data.

6. Operating and Maintenance Instructions: Arrange for the Manufacturer's Representative and Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. This shall include but is not limited to a detailed review of the following:

   Maintenance manuals.
   Spare parts and materials.
   Control sequences.
   Hazards.
   Warranties and bonds.
   Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

   Start-up and shutdown.
   Emergency operations.
   Safety procedures.

1.17 WARRANTY

A. In submitting a proposal, each bidder thereby represents that he will, upon award of the contract, guarantee in writing all materials and workmanship for a period of Two (2) years from date of substantial completion. During the guarantee period the Contractor will be required, within a reasonable length of time after receipt of written notice by the Owner, to make good any defects in materials or workmanship which may have developed and to make good any damage to other work caused by such defects or the repairing of the same, at his own expense and without cost to the Owner.

b. If a bidder cannot guarantee any material, construction and equipment that is shown or specified, or if he cannot furnish any surety bond that may be required, then it shall be so stated in his proposal, and unless this is done, it shall be understood that the bidder accepts all of the guarantee conditions called for, and he shall be bound thereto upon award of the contract. If the Owner should consent to waive any requirements in this respect, then it shall have effect only if such waiver is expressly set forth in the signed contract agreement.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.

B. "Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

C. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

D. Product Delivery, Storage, and Handling: Deliver, store and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.

E. Materials Storage and On-Site-Work: The Contractor shall maintain the site in a clean, neat and orderly manner at all times. Materials may be stored at the school in a designated site agreed to by both the Contractor and the Owner's project manager.

F. Installation of Products: Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Removal of Existing Products, Materials or Equipment: The Contractor shall "Remove" all existing products, materials or equipment as designated in the summary of work and as indicated in other sections of these specifications. The contractor shall be responsible for the disposal of these items at no cost to the owner.

PART 3 – EXECUTION

3.1 PROJECT CLOSEOUT

A. Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:

1. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

2. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar record information.

3. Change-over permanent locks and transmit keys to the Owner.

4. Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

5. Complete final clean up. Touch-up and repair and restore marred exposed finishes.

6. Upon completion of the Work, submit record Specifications to the Engineer for the Owner's records.

B. Site Restoration:

1. The Contractor shall be responsible for repairs to the grounds, building and/or blacktop due to traffic and/or the storage of materials. Repairs shall be made to the satisfaction of the Owner's representative and shall equal the original conditions.

C. Final Cleaning: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent labels.

2. Clean transparent materials.

3. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

D. Removal of Protection: Remove temporary protection and facilities.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

(END OF SECTION)

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Definitions and Explanations: “Alternates” are defined as alternate products, materials, equipment systems, methods, units of work for major elements of construction, which may, at Owner’s option be selected for work in lieu of corresponding requirements of Contract Documents.

1. Alternates may or may not change scope and general character of work substantially.

B. Accepted Alternates: Refer to Owner-Contractor Agreement and subsequent modifications thereof (if any) for determination of which alternates listed have been accepted, and are, therefore, in full force and effect as though originally included in Contract Documents for base bid.

C. Notification: Immediately following award of contract, prepare and distribute to each entity or person to be involved in performance of work, notification of status of each alternate scheduled and including those subsequently added by notification during bidding. Indicate which alternates have been: 1) accepted, 2) rejected, and deferred for consideration at later date as indicated. Include full description of negotiated modifications to alternates, if any.

D. Requirements of the General Conditions, Supplementary Conditions and Division I of these specifications apply to this section.

E. The work under these Alternates shall be performed in accordance with the applicable Sections of these specifications.

1.2 GENERAL ALTERNATE REQUIREMENTS

A. General: Description for each alternate is recognized to be incomplete and abbreviated but implies that each change must be complete for scope of work affected. Refer to applicable sections (Divisions 2 through 16) and to applicable Drawings for specific requirements of each alternate. Coordinate related requirements among sections of Specifications as required. Modify surrounding work as required to integrate with work of each alternate.

1.3 ALTERNATE DESCRIPTIONS

A. <u>Alternate No. 1A to the Base Bid</u> –Provide The following materials to the Owner.
   a) Green Valley - Hoffman Enclosure model #A24N24BLP & Hoffman Mounting Plate model #A24N24MPP. FCPS obtains these from Capital Tristate
   b) Green Valley - AiPhone, JP AI phone series with remote cameras
   c) Green Valley - LNL-1320 Interphase Module, Dual Reader @ $ 598.03
   d) Green Valley - 1,000 spool of 18-8 plenum rated shielded wire.
   e) Green Valley - Provide two (red light) LED Exit lights with emergency light

B. <u>Alternate No. 1B to the Base Bid</u> – At Green Valley in addition to Alt #1A, provide an electrician to install the items provided to the Owner in 1A as identified above. This alternate will require an electrical permit, electrical Contractor, connection and installation of the electrified door hardware to the FCPS security access system and installation of the Ai Phone connected to the remote cameras as well as interphased to the FCPS security access system

C. <u>Alternate No. 2A to the Base Bid</u> –Provide The following materials to the Owner.
   a) Kemptown - AiPhone, JP AI phone series with remote cameras
   b) Kemptown - LNL-1320 Interphase Module, Dual Reader @ $ 598.03
   c) Kemptown - 1,000 spool of 18-8 plenum rated shielded wire.
   d) Kemptown - Provide two (redlight) LED Exit lights (emergency lighting from FCPS generator)

D. Alternate No. 2B to the Base Bid – At Kemptown Elementary in addition to Alt #1A, provide an electrician to install the items provided to the Owner in 1A as identified above. This alternate will require an electrical permit, electrical Contractor, connection and installation of the electrified door hardware to the FCPS security access system and installation of the Ai Phone connected to the remote cameras as well as interphased to the FCPS security access system

– END OF SECTION 01 23 00 –

SECTION 01 04 50

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 Scope:

1. This Section establishes general requirements pertaining to cutting, fitting and patching of the Work required to:

    1. Make the several parts fit properly;

    2. Uncover work to provide for installing, inspecting, or both, of ill-timed work;

    3. Remove and replace work not conforming to requirements of the Contract Documents; and

    4. Remove and replace defective work.

    5. Remove and patch existing construction for the completion of contract work.

1.2 Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, the General Conditions and Sections in Division 1 of these Specifications.

2. In addition to other requirements specified, upon the Architect's request uncover work to provide for inspection by the Architect of covered work, and remove samples of installed materials for testing, to verify conformance with the Contract Documents.

3. Do not cut or alter work performed under separate contracts without the Architect's written permission.

1.3 Quality Assurance:

1. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

2. Avoid unnecessary or excessive cutting. Where cutting of a finished surface is required, make cuts neatly along true lines so they will be concealed by finished work and where they will be least conspicuous.

1.4 Submittals:

1. Request for Architect's consent:

    1. Prior to cutting which effects structural safety, submit a written request to the Architect for permission to proceed with cutting. Also obtain written approval from the local building officials, if required by the local building code.

    2. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect and secure his written permission and the required Change Order prior to proceeding.

Notices to the Architect:

3. Prior to cutting and patching performed pursuant to the Architect's instructions, submit cost estimate to the Architect. Secure the Architect's approval of cost estimates and type of reimbursement before proceeding with cutting and patching.

4. Submit written notice to the Architect designating the time the Work will be uncovered, to provide for the Architect's observation.

PART 2 - PRODUCTS

2.1 For replacement of items removed, use materials complying with pertinent Sections of these Specifications and closely matching the aesthetic value of the existing material.

PART 3 - EXECUTION

3.1 Payment of Costs:

1. The Owner will reimburse the Contractor for cutting and patching performed pursuant to a written Change Order, after claim for such reimbursement is approved by the Owner. The Contractor shall perform other cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.

2. Payment of costs for cutting and patching performed due to ill-timed or defective work will be at no additional cost to the Owner.

3.2 Surface Conditions:

1. Inspection:

1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching and backfilling.

2. After uncovering the work, inspect conditions affecting installation of new Work.

2. Discrepancies:

1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.

2. Do not proceed until unsatisfactory conditions are corrected.

3.3 Preparation Prior to Cutting:

1. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

3.4 Performance:

1. The Contractor shall be responsible for any cutting, fitting and patching that may be required to complete his Work except as otherwise specifically provided in the Contract Documents. The contractor shall not endanger any Work of any other Contractor except with the written consent of the Architect.

2. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

3.5 Cleanup:

1. Remove all debris, rubbish, and materials resulting from cutting and patching operations. Transport materials and legally dispose of off site.

END OF SECTION

SECTION 02 11 00

SELECTIVE DEMOLITION

A. GENERAL

1. DESCRIPTION:

1.1 Requirements of the General Conditions, Supplementary Conditions and Division 1 of these specifications apply to this Section.

1.2. Include all labor, materials, appliances and services necessary to complete all demolition work required by the drawings and/or described in this specification.

1.3 Demolition includes the complete removal of building materials, as indicated on the drawings, and proper disposal, off site, of all demolished materials except where noted. Where noted, some materials may be salvaged for reuse on the project and Owner is entitled to a right of first refusal for all materials identified to be demolished.

1.3.1 See Division 15000 for Mechanical portion, and Division 16000 for Electrical portion of demolition.

2. QUALITY ASSURANCE:

2.1 All work of this Section shall be carefully executed without damage to adjacent construction shown to remain for post construction occupancy.

2.2 All materials scheduled to be relocated or reinstalled shall be removed, cleaned, and stored in such manner that they are not damaged. This includes but is not limited to cabinets and counter tops, interior doors, and interior windows.

2.3 All equipment removed as part of this Contract, and selected by the Owner to be stored for future use by the Owner, shall be delivered to the Owner's storage area.

2.4 Maintain all legal means of egress for adjacent and affected occupied areas during all demolition activities.

3. CONDITION OF STRUCTURES:

3.1 The Owner assumes no responsibility for the actual condition of structures to be demolished.

3.2 Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable. However, variations within the structure may occur due to work completed by the construction of earlier phases of this Project, and/or by Owner's removal and salvage operations prior to the start of the demolition work.

3.3 The Owner will be removing furnishings as required to make the work area accessible for operations.

B. EXECUTION

4. GENERAL:

4.1 Perform demolition in a systematic manner, in accordance with approved submittals.

4.2 Where required to install new finishes. Remove existing materials in a manner to accommodate new finishes including removal of all coatings, grouts, adhesives, and other bonding agents.

4.3 Where existing finishes are to remain and abut adjacent new construction, cut and remove existing materials in a neat fashion with straight edges without chipping or cracking.

5. TRAFFIC:

5.1 Conduct demolition operations and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the Owner. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

6. PROTECTION:

6.1 Provide fenced passageways, as required, to ensure the safe passage of persons around the area of demolition. Conduct operations to prevent damage by falling debris or other cause to adjacent buildings, structures, landscaping and other facilities as well as persons.

6.2 Provide dust-tight barriers as required to separate construction/demolition areas from building areas occupied by the Owner during the construction period.

6.3 Cover and protect furnishings that will remain in place during the course of construction.

6.4 Cover and protect floor finishes that will remain in place during the course of construction.

6.5 Provide a weather tight and secure barrier immediately upon removal of items from exterior walls such as louvers, doors, and windows.

7. DAMAGES:

7.1 Promptly repair damages caused to adjacent facilities by demolition operations, as directed by the Architect and at no cost to the Owner.

8. UTILITY SERVICES:

8.1 Maintain existing utilities, indicated to remain, keep in service, and protect against damage during demolition operations.

8.2 Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Architect. Provide temporary services during interruptions to existing utilities, as acceptable to the Architect.

9. POLLUTION CONTROLS:

9.1 Use water sprinkling, temporary enclosures, and other suitable methods as necessary to limit the amount of dust and dirt rising and scattering in the air, to the lowest level of air pollution practical for the condition of work. Comply with the governing regulations.

9.2 Clean adjacent structures and improvements of all dust, dirt and debris caused by demolition operations, as directed by the Architect. Return areas to condition existing prior to the start of the work.

10. REMOVAL:

10.1 General: Remove from the site all debris, rubbish and other materials resulting from demolition operations. Storage or sale of materials will not be permitted on the site.

10.2 Burning: Burning of removed materials from demolished structures will not be permitted on the site.

10.3 Removal: Transport all materials, not scheduled to be delivered to the Owner, removed from demolished structures and disposed of off the site.

10.4 Recycling: Ceiling Tile shall be recycled by the original manufacturer (Armstrong) to the greatest extent possible.

- End of Section -

SECTION 05 40 00

COLD FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Non-structural wall and floor framing on interior of building

B. Metal furring strips

1.2 RELATED SECTIONS

A. Section 09260 – Gypsum Board Systems

1.3 QUALITY ASSURANCE:

A. All work shall be in compliance with the Standard Specifications for Structural Steel for Building, and the Code of Standard Practice, adopted by the American Institute of Steel Construction. All metal stud work engaging architectural finishes shall be straight, plumb and true, and shall in no way interfere with the installation of such finishes.

1.4 SUBMITTALS:

A. Submit manufacturer's literature for all materials and installations.

1.5 WEATHER CONDITIONS

A. Comply with manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Metal Framing:

1. Cold Formed (light gauge) Metal Framing (in non-structural locations): Materials shall conform to ASTM A1003, dimensions as indicated on the supplier's approved shop drawings, galvanized per ASTM A1003 with a minimum G40 coating. Wall framing is to be a minimum 20 gage at a maximum spacing of 16" on center. Provide bridging, accessories and fasteners as required by job conditions and the supplier's engineered shop drawings. Gage and strength to be determined by supplier as required for conformance with structural and building code requirements.

2. See structural notes and drawings for additional product requirements.

B. Metal Furring:

1. Roll formed, hat-shaped sections of minimum 20 gauge galvanized steel, size 0.875" x 2.75"

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Install metal framing as indicated on the drawings and in compliance with manufacturer's instructions, securely attaching track to structure as indicated on the drawings, and studs to track at 16" on center, unless otherwise noted. Provide deflection track as required.

B. Finished surfaces shall be smooth, uniform and ready to receive architectural finishes and decoration. Protect finished surfaces, and repair damaged work to the satisfaction of the Architect.

3.2 CLEAN-UP:

A. At the completion of the job, remove all excess materials from the site.

- END OF SECTION 05 40 00 -

SECTION 07 90 00

JOINT SEALERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparing substrate surfaces.

B. The required applications of sealants include, but are not limited to, the following general locations in new work, or in areas disturbed by the work of this project:

1. Interior:

a. Metal Door and window frames.
b. Joints at all surfaces to receive opaque finish.
c. Joints between steel columns and masonry walls.
d. Joints between all dissimilar materials unless otherwise noted.
e. Other as indicated.

1.2 RELATED SECTIONS

A. Section 08 80 00: Sealants required in conjunction with glazing methods.

1.3 REFERENCES

A. ASTM C790 - Use of Latex Sealing Compounds.

B. ASTM C804 - Use of Solvent-Release Type Sealants.

C. ASTM C834 - Latex Sealing Compounds.

D. ASTM C920 - Elastomeric Joint Sealants.

E. ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers.

F. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification.

1.4 SUBMITTALS

A. Submit under provisions of Division 1.

B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and color availability.

C. Samples: Submit two samples illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation and perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Specified work shall be installed by skilled tradesmen, experienced in the application of the types of materials.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Applicator: Company specializing in performing the work of this section with minimum five years documented experience.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation. Apply compound prior to final coat of paint.

1.8 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Deliver all materials to job site in factory sealed and labeled containers; label shall show: Manufacturer, Type, Date of Manufacture, Shelf Life, Curing Time at 70 degrees F, Color and Manufacturer's Instructions.

1.9 COORDINATION

A. Coordinate the work with all sections referencing this section.

1.10 WARRANTY

A. Provide five year warranty under provisions of Division 1.

B. Warranty: Include coverage for installed sealants and accessories which fail to achieve air tight seal, water tight seal and exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.0 MANUFACTURERS:

A. Sika Corporation

B. Pecora Corporation

C. Sonneborn – Chemrex

D. Tremco, Inc.

2.1 SEALANTS

A. Back-up Materials: Flexible closed cell, expanded polystyrene or polyethylene round rodding, with diameter 1.333 times width of joint

B. Interior Sealant: Acrylic Emulsion Latex Type C: ASTM C834, single component; color as selected by the Architect

C. Interior Walls/Floors (Ceramic Tile): Pecora Urexpan NR-201, one part, self-leveling, moisture curing polyurethane sealant, designed for horizontal joints, Fed. Spec. TT-5-00230C, Type I, ASTM C920, color as selected by the Architect

D. Primers, Cleaners and Bond Breaker Tape: Provide as recommended by sealant manufacturer's installation instructions for the conditions and locations indicated on the drawings.

E. All sealants and sealant primers must meet or exceed Bay Area Air Quality Management District Reg. 8, Rule 51.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 30 percent larger than joint width; manufactured by Dow Chemical, Sonneborn or approved equivalent.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate surfaces and joint openings are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with ASTM C804 for solvent release and ASTM C790 for latex base sealants.

D. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C804 for solvent release and ASTM C790 for latex base sealants.

B. Measure joint dimensions and size materials to achieve required 2:1 width/depth ratios.

C. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

3.4 CLEANING

A. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of Division 1.

B. Protect sealants until cured.

- END OF SECTION 07 90 00 -

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Flush wood doors; flush configuration; fire rated, non-rated, and acoustical.

1.2 RELATED REQUIREMENTS

A. Section 08 80 00 - Glazing.

1.3 REFERENCE STANDARDS

A. ASTM E413 - Classification for Rating Sound Insulation.

B. ASTM E1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems.

C. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada.

D. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc..

E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

F. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc..

G. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.

H. WDMA I.S.1-A - Architectural Wood Flush Doors; Window and Door Manufacturers Association.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Specimen warranty.

D. Test Reports: Show compliance with specified requirements for the following:
   1. Sound-retardant doors and frames; sealed panel tests are not acceptable.

E. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria, identify cutouts for glazing and louvers.

F. Samples: Submit two samples of door veneer, 12 x 12 inch in size illustrating wood grain, stain color, and sheen.
   1. Full size door in selected color to be sent to job site for final approval by Architect prior to fabrication of the remaining doors for the project. If approved, door can be used in the Work and will be used as a representative sample.

G. LEED Submittals:
   1. Product data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of pre-consumer and post-consumer recycled content. Include statement indicating cost of each product with recycled content.
   2. Product data for Credit MR 7: For all new wood, submit vendor invoices. For FSC certified new wood, submit FSC Chain-of-Custody certificates indicating compliance with forest certification requirements and vendor invoice indicating Chain-of- Custody

3. Product Data for Credit EQ 4.4: For adhesives and composite wood products, documentation indicating that product contains no added urea formaldehyde.

H. Warranty, executed in Owner's name.

1.5 QUALITY ASSURANCE

A. Installed Fire Rated Door Assembly: Conform to NFPA 80 for fire rated class as indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.7 PROJECT CONDITIONS

A. Coordinate the work with door opening construction, door frame and door hardware installation.

1.8 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Interior Doors: Provide manufacturer's warranty for the life of the installation.

C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Wood Veneer Faced Doors:

B. Eggers Industries: www.eggersindustries.com.

C. Marshfield DoorSystems, Inc: www.marshfielddoors.com.

D. Algoma Hardwoods, Inc. .

E. Oshkosh Architectural Door Company.

F. VT Industries, Inc.

2.2 DOORS

A. All Doors: See drawings for locations and additional requirements.
   1. Quality Level: Premium Grade, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300.
      a. Grade A faces.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
   3. Faces are bonded to core using a hot press.
   4. Provide wood doors made from wood harvested from forests certified by an FSC-accredited certification body. All non-FSC wood in assemblies with FSC-certified wood shall meet the FSC Controlled Wood (CW) criteria.
   5. Provide doors assembled with glues containing no added urea-formaldehyde.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.

1. Provide solid core doors at all locations .
2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C or UBC Standard 7-2-97 ("positive pressure"); UL or WH (ITS) labeled without any visible seals when door is open.
3. Sound Retardant Doors: Minimum STC of 42 or better, calculated in accordance with ASTM E413, tested in accordance with ASTM E1408.
   a. Provide doors specifically designed for sound transmission control with a high density core and damping.
   b. Refer to hardware specification for required hardware items.
4. Wood veneer facing with factory transparent finish .

2.3 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.

B. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

C. Sound Retardant Doors: Equivalent to Type PC construction with core as required to achieve rating specified; plies and faces as indicated above.

D. Recycled Content: Provide particleboard cores with minimum 80 percent recycled content; provide mineral cores with minimum 20 percent recycled content.

2.4 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: White Maple, veneer grade as specified by quality standard, plain sliced, book veneer match, running assembly match; unless otherwise indicated.
   1. Vertical Edges: Any option allowed by quality standard for grade.
   2. Pairs: Pair match each pair; set match pairs within 10 feet of each other when doors are closed.
   3. Room Match: Match door faces within each separate room or area of building. Corridor door faces do not need to match where they are separated by 20 feet or more.

2.5 ACCESSORIES

A. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

2.6 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with Bonded Stiles and Rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
   2. Provide solid blocking for other throughbolted hardware.

C. Fit door edge trim to edge of stiles after applying veneer facing.

D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

F. Provide edge clearances in accordance with the quality standard specified.

G. Composite Wood, Agrifiber Products and Laminating Adhesives (shop and field applied): Contain no added urea formaldehyde resins.

2.7 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with specified quality standard:
   1. Transparent Finish: Transparent catalyzed polyurethane, Premium quality, TR-6, satin sheen.
   2. Stain Color: A selected by Architect from manufacturers full range.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

3.2 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.3 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION 08 14 16

SECTION 08 71 00 - FINISH HARDWARE
(Updated by FCPS Jan. 3, 2013)

PART 1 GENERAL

1.1 DESCRIPTION:

A. Provide all work necessary to complete all finish hardware work as shown on the drawings or inferable there from and/or specified herein, In accordance with the requirements of the Contract Documents.

1.2 RELATED SECTIONS:

A. 06200: Finish Carpentry
B. 08110: Frames
C. 08210: Wood Doors
D. 08410: Aluminum Storefront Systems (this section shall require hardware by section 08710 specified herein).
E. 16700: Electrical Work

1.3 DETAILS OF WORK:

A. Refer to drawings, details and schedules for Items requiring finish hardware. It is the intent of this section to include all finish hardware required for the project, except for items, which are specifically noted as being specified in other sections of the specifications.

B. Coordinate the application of hardware items with door and frame details and with methods of fastening as hereinafter specified.

C. Furnish complete templates, schedules and fastening details to door and frame manufacturers and other trades requiring same, to insure doors and frames are properly cut, reinforced and prepared to receive hardware.

D. Single source, furnish only the products of one manufacturer where several manufacturers are specified for one type of hardware.

E. Work includes, but not limited to the following Items:

Hinges
Lock and latch sets

Deadlocks
Exit devices and removable mullions
Door closers
Electro-magnetic door release
Electro-magnetic locks
Power supply Key
switch
Overhead stops and holders
Push and pull plates
Kickandarmorplates
Flush bolts
Floor and/or wall stops
Thresholds
Astragals
Weather-stripping
Gasketing
Door silencers
Key cabinet

F. Work specified to be provided under other sections, includes rough carpentry and Items of finish hardware so specified or provided as part of other sections, Including the following;

Hardware For:

Windows Toilet
partitions
Operable partitions
Lockers
Cabinets or casework
Roof scuttles
Fence or gates

1.4 REQUIREMENTS OF REGULATORY AGENCIES:

A. Furnish finish hardware in accordance with the requirements, under the published procedures of the following recognized agencies. Wherever possible all hardware and its application are intended to comply with the latest edition of CASO/ANSI A117.1, NFPA 80, NFPA 101 and NFPA 105. It is the intent of this specification that all hardware and Its application shall comply or exceed the standards for labeled openings. In case of conflict between type of hardware specified and type required for fire protection, furnish type required by NFPA and UL.

1.5 QUALITY ASSURANCE:

A. All work performed and all materials furnished shall be in conformity with the

contract requirements.

B. All products listed herein are intended to describe quality, type and function of items listed. Accuracy, and strict compliance with the samples and descriptive literature upon which acceptance is based, shall be the sole responsibility of this supplier.

C. If the Architect finds materials or the finished product in which the materials are used are not in complete conformity with the contract requirements and has resulted in an inferior or unsatisfactory product, the materials shall be removed and replaced by and at the expense of the supplier.

D. The supplier shall be responsible for the provisions, proper coordination and function of the finish hardware required for all openings.

1.6 SUPPLIER QUALIFICATIONS:

A. The hardware supplier shall, in the opinion of the Architect, have sufficient experience and shall have an Architectural Hardware Consultant (AHC) as certified by the Door and Hardware Institute, as a full-time employee of Its organization. The Architectural Hardware Consultant shall be available to attend job meetings as required.

B. After delivery of hardware and prior to its Installation, the hardware consultant shall meet with the Architect and Contractor to compare final samples with actual hardware delivered. To assure acceptability, they shall review catalogs, brochures, templates, Installation Instructions, final hardware schedule, and shall rehearse Installation, procedures and workmanship, with special emphasis on unusual conditions to ensure correct technique of installation, and coordination with other work.

C. The hardware supplier shall maintain a warehouse and office within a fifty (50) mile radius of the job and maintain an inventory and field service staff in order to service the project properly.

1.7 SUBMITTALS:

A. Submit, for review, six (6) complete copies of the finish hardware schedule covering complete Identification of all Items required for the project. Include manufacturer's names and Identification of finishes. Include six (6) complete copies of catalog cuts and/or technical data sheets, identifying each item of hardware and any other data as may be required to show compliance with these specifications. The data on the shop drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable the Architect to review the information as required. These schedules shall be prepared in conformity with the best practice and standards of the Door and Hardware Institute.

B. Include a separate keying schedule, which shall Include Architect's door numbers, hardware headings, room description numbers and Owner's revised room description numbers as part of the final submittal of the hardware schedule. Schedule format to include an additional column to allow for Owner's revised room description numbers. Upon final approval of the keying requirements by the Architect and Owner, the Owners room numbers shall be listed in the appropriate column and resubmitted to Frederick County Public Schools for final review and approval.

C. The Architect's review of schedules shall neither be construed as a complete check nor shall it relieve the Contractor of responsibility for errors, deviations or omissions from the specified requirements to provide complete hardware for the project.

D. After approval of the hardware schedule the hardware supplier shall furnish to FCPS, four (4) complete sets of manufacturers warranties and product data.

All information will be submitted bound in a hardware schedule cover and shall contain the following information in the order as listed:

- Hardware schedule cover sheet
- Index of manufacturer's
- Manufacturers catalog cuts in the order as listed in the index
- Catalog cuts to be color coded and identified
- Warranties to be listed in order of Index the supplier shall also make available to the owner any service manuals for locksets.

1.8 SAMPLES:

A. In conjunction, and concurrent therewith, with the submission of the finish hardware schedule, submit to the Architect, samples of each typical Item of exposed hardware in specified finish. Submission of samples prior to installation Is mandatory. Architect's review of samples will be for design, pattern, finish and color only. All other requirements are the exclusive responsibility of the Contractor.

B. Samples Required

1. Hinges, each type.
2. Lockset with turn lever, lever cylinder.
3. Panic device, rim type with trim.
4. Pulls complete with mounting accessories.
5. Push plate with fasteners.
6. Surface mounted closer.
7. Overhead holder/stop
8. Floor and/or wall bumpers

C. After final review, deliver samples to job site for comparison with hardware delivered for installation. Unblemished samples may be used as part of the

Work.

1.9 PRODUCT HANDLING ANDSTORAGE:

A. Package and label each Item of hardware separately. Tag each item in accordance with the final hardware schedule. Each package shall contain appropriate fastenings, instructions and installation templates. Protect all items from loss or damage in shipment.

B. The General Contractor shall be responsible for receiving and providing an adequate secured storage area for all hardware. Materials shall be stored so as to assure the preservation of its quality and acceptability for the work. Locate stored material to facilitate its prompt inspection by the Architect.

PART 2 PRODUCTS

2.1 GENERAL:

A. Refer to hardware sets for application of individual hardware items as referenced to each opening or function.

2.2 HARDWARE FINISHES:

A. Produce finishes to exact match with Architect's selected samples. Variances in the color of each finish shall be minimized regardless of whether the base metal is cast, forged or stamped, or when plating is applied over steel, brass or bronze. Comparative finishes shall appear the same when viewed two feet apart and three feet away. The two samples shall be under the same lighting conditions and on the same relative plane. The finish for each item of hardware shall match the finish selected for lock and latch sets. The type of finish for each hardware item Is Indicated in the hardware sets.

2.3 HARDWARE MOUNTING HEIGHTS:

A. The following mounting heights shall apply throughout the work unless otherwise shown or specified and shall comply with the locations for hardware as recommended by the Door and Hardware Institute, other than as specified herewith.

Centerline of strike for levers	40 5/16”
Centerline of exit device touch	40”
pad Centerline of strike for	48"
dead locks Centerline of push	40"
plates Centerline of door pulls	40"

2.4 FASTENERS:

A. Provide concealed fastenings wherever possible. The use of self-tapping or sheet metal screws Is prohibited on all hardware except kick plates and push plates. All exit devices and door closers shall be through-bolt mounted.

1. Concealed Fasteners: Furnish hardware items complete with appropriate type and length of screws or other fastenings suitable to ensure proper application.

2. Exposed Fasteners: Furnish hardware with countersunk Phillips oval head type screws where concealed fastening is not possible. The finish or color of these screws shall harmonize with the product as to finish and material.

2.5 MATERIALS AND MANUFACTURERS: See Drawings

2.6 DOOR SILENCERS:

A. Furnish for all hollow metal frames, three door silencers for each single door and two each for each pair of doors as manufactured by one of the following manufacturers.

1. Ives:
2. Rockwood: SR64 608 307D
3. Hager:

2.7 KEYCONTROLSYSTEM:

A. General: Furnish a complete key system of the type specified.

2.8 KEYS AND KEYING:

A. Provide Best brass construction cores and keys during the construction period. Plastic construction cores will not be permitted. Construction cores shall not be part of the Owner's permanent keying system or furnished on the same keyway or key section as the owner's permanent keying system.

B.

C. Permanent Best cores and keys shall be prepared according to the approved keying schedule and shall be furnished to the Owner by the local Best factory representative prior to occupancy.

D. All cylinders and cores shall be Best 7-pin, interchangeable core. Furnish Best "Premium" cores at all exterior keyed openings. Best cores shall be keyed by the factory to match the existing Frederick County Public School key system.

E. Permanent Best keys and cores shall be stamped with the applicable key mark for identification. These visual key control marks or codes will not include the actual key cuts. Permanent keys will also be stamped "Duplication Prohibited."

F. Grand Master keys, Master keys and other Security keys shall be transmitted to the Owner by Registered Mail, return receipt requested.

G. Furnish keys in the following quantities:
   1. 1 each Construction Master keys
   2. 1 each Construction Control key

H. The Owner, or the Owner's agent, will install permanent cores and return the construction cores to the Contractor's Hardware Supplier. All Construction cores and keys remain the property of the Contractor's Hardware Supplier.

PART 3 EXECUTION

3.1 INSTALLATION GENERAL:

A. The Contractor shall receive all hardware for doors as shown and scheduled and as in accordance with the approved hardware schedule.

B. Provide an adequate and secured storage area for all hardware; refer to paragraph 1.09.

C. Install all hardware in strict accordance with the manufacturer's templates and Installation procedures and workmanship, refer to paragraph 1.03.

D. The Contractor shall turn over to the Owner any tools supplied with the hardware to adjust or maintain the hardware.

E. In conjunction with the hardware supplier, the Contractor shall adjust and check the installation of hardware prior to acceptance by the Owner and/or Architect.

F. The Contractor shall obtain a copy of ANSI/DHI A115.IG-1994. "Installation Guide for Doors and Hardware." It is the intent of this document to be use All hardware shall be inspected by the factory representative prior to final acceptance by FCPS to ensure proper installation and adjustment. The representative shall submit a written report to the Architect with copies to the Contractor and hardware supplier upon completion of his service. This report shall Include any installation problems, noting door numbers and location along with recommendations to correct the problem.

G. The Contractor and construction manager shall coordinate a pre-installation meeting with the hardware installers, the hardware supplier, and manufacturers' representative to review products specified and their proper Installation.

3.2 Electronic Access Control System Requirements:

A. Summary of Work: The hardware supplier shall obtain the services of Best Access Systems to furnish and install the hardwire Electronic Access Control System (EAC) under this Section. The EAC system shall be tied into Frederick County Public Schools (FCPS) existing BASIS Access Control Software System. Through the hardware supplier, BEST shall furnish all labor, material and services necessary to install a complete EAC system. Note, regardless of door and frame material, the EAC system shall be included in the hardware supplier scope of work. No deviations will be allowed. Card Readers shall be provided at the doors indicated in the attached hardware schedule.

B. Access Control System Equipment Requirements:

Furnish the following equipment:

1. One (1) Intelligent System Controller/ Network Device/ Communication Cable & Enclosure (see Alternate 1A)
2. Include electrical permit & connections in Alternate 1B

Note equipment shall be configured and engineered to suit over all system requirements above quantities may vary.

C. Hardware Requirements and Door Application:

At exterior (double or single) doors requiring exit devices, furnish fall secure quiet electric latch retraction exit devices (QEL), power supply, and power transfer hinge (EPT-10). At non-egress (single) exterior door furnish cylindrical lockset with fall secure electric strike (6211). All electrified hardware shall be interfaced with the EAC system, and be connected to the emergency generator. Regardless of door and frame material, electrified hardware shall be Included in the hardware supplier scope of work.

Example 1 Double doors to receive card reader will require:

2	EA	CONTINUOUS HINGE	224HD
1	EA	POWER TRANSFER	EPT-10
1	EA	MULLIION	KR4954 X 154 STABILIZERS
1	EA	PANIC HARDWARE	CD XP99EO
1	EA	PANIC HARDWARE	SD QELXP99EO
1	EA	RIM CYLINDER	1E72
3	EA	MORTISE CYLINDER	1E74
1	EA	DOOR PULL	VR910 DT
1	EA	DOOR PULL	VR910 NL
2	EA	SURFACE CLOSER	4040XP SCNS
1	EA	CARD READER	BAS-2005 W
2	EA	DOOR SWEEP	
1	EA	THRESHOLD	
1	EA	POWER SUPPLY	PS 904-4RL-BB-KLC

Example 2 Single door to receive card reader will require:

1	EA	CONTINUOUS HINGE	224HD
1	EA	POWER TRANSFER	EPT-10
1	EA	PANIC HARDWARE	SD QELXP99 EO
1	EA	RIM CYLINDER	1E72
1	EA	MORTISE CYLINDER	1E74
1	EA	DOOR PULL	VR910NL
1	EA	SURFACE CLOSER	4040XPSCNS
1	EA	DOOR SWEEP	
1	EA	THRESHOLD	
1	EA	POWER SUPPLY	PS904-4RL-BB-KLC
1	EA	CARD READER	BAS 2005W

D. Power and Network Requirements:

As necessary, the Electrical Contractor responsible for Division 16 shall provide switched 120V power, conduit and junction boxes at each card reader location and In the Server/Telecom room for EAC equipment. General Contractor shall be responsible for providing a network drop at the Server/Telecomroom. FCPS shall provide a dedicated IP address to BEST before EAC system start up.

E. Owner Provided:

Magnetic cars swipe readers,

Magnetic swipe cards shall be furnished and programmed by FCPS.

F. Submittals:

In accordance with Division 1, submit shop drawings and catalog cuts for approval.

3.1 Hardware Set Schedule: See drawings

END OF SECTION

SECTION 08 80 00

GLASS AND GLAZING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes glass and glazing.

B. Work shall be conducted in accordance with General Conditions, Supplementary Conditions, Division 1 and the requirements of this Section.

1.2 STANDARDS

A. As required by Safety Glazing Materials regulations and agencies having jurisdiction, provide safety glass manufactured, tested, permanently labeled and installed per these requirements.

1.3 SUBMITTALS

A. Shop drawings shall be in accordance with the General Conditions, Supplementary Conditions and Division 1.

B. Copies of the shop drawings, after being certified by the contractor and approved by the Architect, shall be requested by the glazier through channels for the purpose of ordering the glass and expediting its delivery.

C. Samples: Submit, when notified for the Architect's inspection and approval, samples of the types of glass specified. Sample shall be at least 4 inches wide by 9 inches long in required thickness.

1.4 WARRANTIES, GUARANTEES, TESTING

A. Warranty: All insulating glass shall be a banded type and carry a 10-year warranty by the manufacturer that under normal conditions, material obstruction of vision resulting from film formation or dust collection between the interior glass surfaces of the double-insulating glass will not occur.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Glass: Glass shall bear the manufacturer's original label for each piece manufactured by the American-Saint Gobain, Libbey-Owens Ford Glass Company, PPG, Guardian or equal as approved by the Architect.

B. Clear glass shall be transparent flat glass that meets the requirements and tolerances of ASTM C-1036.

C. Glass products shall be tempered for use in doors, entranceways, or other high traffic density areas or in hazardous locations as defined in the U.S. Consumer Product Safety Commission Standard 16 CFR 1201 C1 and C11, or for fixed glazed panels as defined in state glazing laws or building codes.

D. Glazing Compound: Glazing compound shall be the product of Pecora, Tremco, or equal as approved by the Architect, in color matching frames as closely as possible.

2.2 SIZES

A. Glass shall conform to manufacturer's standards for maximum size for each type of glass. All tempered glass and double-insulating glass panels shall be ordered from exact sizes given on shop drawings or from field measurements. Lights that are narrower than they are high shall be cut to order to obtain the best viewing.

2.3 GLASS TYPES

A. Safety Glass (Type G-3) (interior glazing): Clear tempered, 1/4” thick, ANSI Z97.1, Federal Standard 16 CFR 1201 Category I and Category II, with label clearly visible after glazing. This type includes laminated glass as required by the standards referenced above and IBC 2012 Chapter 24 Section 6.

B. Sealant: Elastic non-hardening glazing sealant, recommended by glazing manufacturer.

C. Setting Blocks: Neoprene, hardness: 70 to 80 Shore A Durometer, generally 1/8” wider than materials to be glazed and minimum 4” long, 1/8” thick.

PART 3 EXECUTION

3.1 INSTALLATION

A. Glazing Standards: Applicable requirements of the Glazing Manual of Flat Glass Marketing Association (FGMA), 3310 Harrison, Topeka, Kansas, 66611 latest edition are hereby made a part of these specifications.

B. Glazing shall not be done when the temperatures are below 40 degrees Fahrenheit. When circumstances require the glazing below 45 degrees Fahrenheit, steps shall be taken to assure clean, dry and frost-free surfaces as approved by the Architect.

C. Spacers and Shims: All glass to be set with 3/32 inch x 1/4 inch x 3 inch spacers, positioned on 24 inch centers on fixed and removable stops made of 40-70 shore hardness rubber or neoprene setting blocks, 1/4 inch x 1 inch x 4 inches long or 1/4 inch x 5/8 inch x 4 inches long, as required by FGJA Standards for installing glass at quarter points.

D. Channel Glazing: All glass to be set with a minimum of 1/8 inch spacers on both sides of glass with setting blocks at quarter points. Against rabbet, apply butyl tape. Face bed with one part acrylic sealant at heel finished with architectural glazing compound or vision strip.

E. Face Glazing: All glass to be set with a minimum of 1/8 inch spacers on rabbet side of glass with setting blocks at quarter points. Against rabbet, apply butyl tape. Face bed with architectural glazing compound.

F. Neoprene Beads: Glass in aluminum door frames and screens held by neoprene-extruded beads, snap-in type shall be inserted into stops with slight buttering at corners with channel glazing compound. Install glass per manufacturer's instructions.

G. Lights in Borrowed Lights: Glaze with metal stops as detailed. Face glaze as specified above.

3.2 CLEANING AND REPLACEMENT

A. This contractor shall properly protect all glass installed by him from injury or breakage during construction of the building. The contractor shall assume all responsibility for breakage by whomsoever caused and shall replace all cracked, broken, scratched or otherwise defective glass when directed to do so by the Architect.

B. Wash, rinse and dry glass at frequent intervals during construction in accordance with manufacturers' recommendations.

- END OF SECTION 08 80 00 -

SECTION 09 25 00
GYPSUM WALLBOARD

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Requirements of the General Conditions and Supplementary Conditions apply to this Section.

B. Include all labor, materials, appliances and services necessary to complete all gypsum wallboard and related work required by the drawings and/or described in this specification.

C. Work of this Section includes repairs to existing gypsum board, located within the existing building, and preparing existing gypsum board to receive new finishes.

1.02 QUALITY ASSURANCE:

A. All work shall be in compliance with the Drywall Construction Handbook, published by United States Gypsum Company.

10.3 SUBMITTALS:

A. Submit manufacturer's literature for all materials and installations.

1.04 WEATHER CONDITIONS:

A. Comply with manufacturer's recommendations.

1.05 WORK BY OTHER SECTIONS:

A. Division 5 - Lightgage Metal Framing

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Gypsum Wallboard:

1. Regular: 5/8" x 4' x 8' (minimum), with tapered edges, ASTM C-36, Underwriters Laboratories Approved

2. Type X (special fire resistant): 0.625" x 4' x 8' (minimum), with tapered edges, Underwriters Laboratories Approved

B. Fasteners: 1-1/2" GWB-54 annular ringed nails or 1-1/4" drywall screws, Type W with phillips head.

C. Drywall accessories include corner and casing beads; shall be standard galvanized recessed types requiring finishing with joint treatment compound.

D. Joint Treatment System: Includes perforated tape, joint compound and topping compound.

E. Expansion Joints: USG Control Joint #093

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Install gypsum wallboard and accessories in locations and positions indicated on the drawings, complying with manufacturer's installation instructions.

B. Cut wallboard by scoring and breaking, cut to fit tightly to other sheets of wallboard and around penetrations and protrusions. Joints shall fall on the centers of supporting members. Install with nails at 8" centers or screws at 16" centers.

C. Finish wallboard using 3 coats of compound 24 hours apart. Finish all dimples from fasteners and joints between sheets of wallboard. Apply dampened tape with the first coat and feather compound edges to provide a smooth and uniform surface. Sand rough areas but do not excessively roughen the wallboard paper.

D. Build fire rated assemblies in accordance with specific fire resistance classifications of the Underwriters' Laboratories.

E. Provide expansion joints as indicated on the drawings. Unless otherwise noted, provide joints to align with expansion control joints in masonry walls, concrete floor, and other building structural elements. Joints shall extend from floor to metal deck/top of gypsum wallboard above, and shall be installed aligned on both sides of all interior walls.

F. Finished surfaces shall be smooth, uniform and ready to receive decoration. Protect finished surfaces, and repair damaged work to the satisfaction of the Architect.

G. Level of Finish: Level 4 in accordance with the United States Gypsum Construction Handbook.

3.02 JOINT TREATMENT

A. Tape, fill and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.

3.03 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

3.04 CLEAN-UP:

A. At the completion of the job, remove all excess materials from the site.

END OF SECTION

SECTION 09 90 00

COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Section Includes:

1. Paint or natural finish all interior surfaces not specifically excluded. Includes:

a. All areas indicated on the drawings and included in the schedule noted to be painted.
b. Areas of patch and repair of existing painted components.

B. Exclusions: In addition to material obviously not requiring paint such as stainless steel, plastic laminate, glass, flooring, tile, etc. Do not paint or finish:

1. Surfaces indicated by finish schedule to remain unfinished.

2. Factory finished surfaces indicated to be factory finished.

a. Aluminum with anodized or baked-on finish.
b. Finish hardware, except hardware with USP finish.
c. Electrical devices, fixtures, and trim.

3. Equipment such as mechanical, and electrical equipment located inside equipment rooms.

1.2 RELATED SECTIONS

A. None.

1.3 REFERENCES

A. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.

B. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.

C. OTC-Regulation No.41

D. SSPC-SP 1 - Solvent Cleaning

1.4 SYSTEM DESCRIPTION

A. Performance Requirements: Indoor Air Quality: Provide products which will not adversely affect indoor air quality through emission of toxic gasses or vapors. Do not use materials with residual of formaldehyde, epoxy resin, or urea-based materials.

1.5 SUBMITTALS

A. Submit under provisions of Division 1.

B. Product Data: Provide data on all finishing products and special coatings.

C. Samples: Submit two samples, 6 x 6 inch in size illustrating selected colors and textures for each color selected. Wood stains shall be applied to actual piece of trim material.

D. Manufacturer's Instructions: Indicate special surface preparation procedures, and substrate conditions requiring special attention.

E. Verify in writing that the products specified will be used as directed or submit for approval a list of comparable materials of another listed approved manufacturer, including full identification of all products by name, color and catalogue number adjacent to those specified, with a statement of equality by the proposed manufacturer.

F. Submit Manufacturer’s certification (MSDS Sheet) for each paint and coating highlighting VOC limits and chemical component limits.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five (5) years experience.

B. Applicator: Company specializing in performing the work of this section with minimum five (5) years experience and approved by manufacturer.

1.7 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame and smoke rating requirements for finishes.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, VOC content, and instructions for mixing and reducing.

C. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions. Storage space shall be designated by the Contractor and approved by the Architect.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

1.10 EXTRA MATERIALS

A. Provide 1 gallon of each color and surface texture to Owner at the completion of the project.

B. Contractor shall label each container with color, type, texture, and room locations in addition to the manufacturer's label. Contractor shall also provide detailed listing by room of color, type, and texture along with manufacturer's name and identification number.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer's: Best quality materials as manufactured by one of following manufacturers will be acceptable:

1. For Brush, Roller or Spray work:

a. Sherwin Williams
b. Benjamin Moore
c. Pittsburgh Paints

B. Quality: All products not specified by name shall be "best grade" or "first line" products of acceptable manufacturers. See Part 3- Execution for materials required for this project. Where possible, provide materials of single manufacturer.

2.2 MATERIALS

A. Coatings: Ready mixed. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.3 FINISHES

A. Refer to schedule at end of section for surface finish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate conditions are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application to the Architect and General Contractor.

C. Test shop applied primer for compatibility with subsequent cover materials.

D. Allow masonry work to cure for at least 30 days before coating. Gypsum board shall be allowed to dry for 15 days before coating.

3.2 PREPARATION

A. Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

B. Correct defects and clean surfaces which affect work of this section. Remove existing coatings that exhibit loose surface defects.

C. Seal with shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

F. Galvanized Surfaces: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.

G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

J. Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish.

D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

E. Sand surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.

G. Allow applied coat to dry before next coat is applied.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to Divisions 15 and 16 for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.

B. Paint shop primed equipment.

C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished.

E. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to visible surfaces. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

F. Paint exposed conduit and electrical equipment occurring in finished areas.

G. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

H. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated. Color band and identify with flow arrows, names and numbering.

I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

J. Finished work is to be adequately covered with uniform color and finish. The number of coats herein specified being a minimum, this contract shall provide any additional coats to produce a first-class job. Architect may select accent colors or deeptone colors (contrasting bright colors) for interior painted walls or ceilings. Where bright colors are selected, apply extra coats of paint where required to obtain completely opaque surface. Make allowances for 10 percent deep tones in bid. Additional labor or materials used for this purpose not allowable as extra cost.

K. Objects on Roof: Paint all metal objects on roof including, but not limited to, rooftop mechanical units, flashings, roof drains, vents, exhaust fans, air intake hoods, roof hatches, etc. as specified under ferrous, zinc coated metals.

L. Allow the following minimum drying time between coats:

1. Exterior work-48 hours.

2. Interior work-24 hours.

3.5 PROTECTION AND CLEANING

A. Protection: Protect floors and adjacent surfaces from paint smears, spatters and droppings.

1. Cover fixtures not to be painted. Mask off areas as required.

2. Finish Hardware: Ensure hardware is removed prior to starting painting operations and that it is replaced only after painting operations have been completed.

a. Hardware Removal and Replacement: Section 08710.

B. Damage to Other Work: Be responsible for damage done to adjacent work. Repair damaged work to satisfaction of Architect. Replace materials damaged to extent that they cannot be restored to their original condition.

3.6 SCHEDULE OF COATINGS

A. Interior:

Surface	Area	Type, Luster & Coats
1. Cementitious Materials	New/Exist. CMU	1 coat: S-W PrepRite Block Filler, B25W25 (16 mils wet, 8 mils dry) 2 coats: S-W Harmony Low Odor Interior Latex Eg-Shel, B9 Series (4 mils wet, 1.6 mils dry per coat)
2. Gypsum Board	New ceilings, walls, and bulkheads	1 coat: S-W Harmony Low Odor Interior Latex Primer, B11W900 (4 mils wet, 1.3 mils dry per coat) 2 coats: S-W Harmony Low Odor Interior Latex Eg-Shel, B9 Series or S-W Harmony Low Odor Interior Latex Semi-Gloss, B10 Series. (4 mils wet, 1.6 mils dry per coat)

- END OF SECTION 09 90 00 -

SECTION 260500

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 EXECUTION OF THE WORK

A. The scope of work shown on the drawings and in these specifications, Division 26 and 28 are all a part of this contract and shall be included in the base bid unless otherwise noted.

B. These Specifications call out certain duties of the Electrical Contractor and/or Subcontractors. They are not intended as a material list of items required by the Contract.

C. These divisions of the Specifications cover the electrical systems of the project. It includes work performed by the electrical trades as well as trades not normally considered as electrical trades.

D. Provide all items and work indicated on the Drawings and all items and work called for in the Specifications in accordance with the conditions of Contract (Division 1 General Requirements Documents). This includes all incidentals, equipment, appliances, services, hoisting, scaffolding, supports, tools, supervision, labor, consumable items, fees, licenses, etc., necessary to provide complete systems. Perform start-up and checkout on each item and system to verify the systems are fully operable.

E. Comply with all provisions of the Contract Documents including Division 1, General Conditions, and Supplementary General Conditions of the Specifications.

F. Certain terms such as "shall, provide, install, complete, start up" are not used in some parts of these Specifications. This does not indicate that the items shall be less than completely installed or that systems shall be less than complete.

G. Examine and compare the Electrical Drawings and Specifications with the Drawings and Specifications of other trades, and report any discrepancies between them to the Engineer and obtain written instructions for changes necessary in the work. At time of bid the most stringent requirements must be included in said bid. Install and coordinate the electrical work in cooperation with other trades installing interrelated work. Before installation, make proper provisions to avoid interferences in a manner approved by the Engineer. All changes required in the work of the Contractor caused by neglect shall be corrected at the expense of the Contractor.

H. It is the intent of the drawings and specifications to provide a complete workable system ready for the Owner's operation. These specifications are equipment and performance specifications. Items described or called out in the specification but not shown on the drawings are considered to be part of the project. Any item not specifically shown on the drawings or called for in the specifications, but normally required to conform to the intent are to be considered a part of the

contract. Installation of the equipment shall be in accordance with the N.E.C., manufacturer recommendation, and industry standards.

I. All material furnished by the Contractor shall be new and unused (temporary lighting and power products are excluded) and free from defects. All materials used shall bear the Underwriters Laboratory, Inc label provided a standard has been established for the material in question.

J. All products and materials to be new, clean, free of defects and free of damage and corrosion.

K. No exclusion from, or limitation in, the symbolism used on the Drawings for electrical work or the languages used in the Specifications for electrical work shall be interpreted as a reason for omitting accessories necessary to complete any required system or item of equipment.

L. The use of words in the singular shall not be considered as limiting where other indications denote that more than one item is referred to.

M. Except for conduit, conduit fittings, outlet boxes, wire and cable, all items of equipment or material shall be the product of one manufacturer throughout. Multiple manufacturers will not be permitted.

1.2 COORDINATION OF THE WORK

A. Certain materials will be provided by other trades. Examine the Contract Documents to ascertain these requirements.

B. Carefully check space requirements with other trades and the physical confines of the area to ensure that all material can be installed in the spaces allotted thereto including finished suspended ceilings. Make modifications thereto as required and approved.

C. Transmit to other trades all information required for work to be provided under their respective sections in ample time for installation.

D. Wherever work interconnects with work of other trades, coordinate with other trades to ensure that all trades have the information necessary so that they may properly install all the necessary connections and equipment. Identify all items of work that require access so that the ceiling trade will know where to install access doors and panels.

E. The locations of lighting fixtures, outlets, panels and other equipment indicated on the Drawings are approximately correct, but they are understood to be subject to such revision as may be found necessary or desirable at the time the work is installed in consequence of increase or reduction of the number of outlets, or in order to meet field conditions or to coordinate with modular requirements of ceilings, or to simplify the work, or for other legitimate causes.

F. Exercise particular caution with reference to the location of panels, outlets, switches, etc., and have precise and definite locations approved by the Engineer before proceeding with the installation.

G. The Drawings show only the general run of raceways and approximate location of outlets. Any significant changes in location of outlets, cabinets, etc., necessary in order to meet field conditions shall be brought to the immediate attention of the Engineer and shall receive approval before such alterations are made. All such modifications shall be made without additional cost to the Owner.

H. Obtain from the Engineer in the field the location of such outlets or equipment not definitively located on the Drawings.

I. Circuit "tags" in the form of arrows are used where shown to indicate the home runs of raceways to electrical distribution points. These tags show the circuits in each home run and the panel designation. Show the actual circuit numbers on the finished record tracing and on panel directory card. Where circuiting is not indicated, the Electrical Contractor must provide required circuiting in accordance with the loading indicated on the drawings and/or as directed.

J. The Drawings generally do not indicate the exact number wires in each conduit for the branch circuit wiring of fixtures, and outlets, or the actual circuiting. Provide the correct wire size and quantity as required by the indicated circuiting and/or circuit numbers indicated and control wiring diagrams, if any, specified voltage drop or maximum distance limitations, and the applicable requirements of the NEC.

K. Adjust locations of conduits, panels, equipment, pull boxes, fixtures, etc. to accommodate the work to prevent interferences, both anticipated and encountered. Determine the exact route and location of each raceway prior to installation.

1. Right of way: lines which pitch to have the right-of-way over those which do not pitch. For example: steam, condensate, and plumbing drains normally have right-of-way. Lines whose elevations cannot be changed to have right-of-way over lines whose elevations can be changed.
2. Make offsets, transitions and changes in direction in raceways and as required to maintain proper head room in pitch of sloping lines whether or not indicated on the Drawings.

L. Contractor shall furnish services of experienced Superintendent, who shall be in constant charge of all work, and who shall coordinate his work with the work of other trades. No work shall be installed before coordinating with other trades.

1.3 EXAMINATION OF SITE

A. Prior to submitting of bids, the Contractor shall visit the site of the job and shall familiarize himself with all conditions affecting the proposed installation and shall make provisions as to the cost thereof. Failure to comply with the intent of this paragraph will in no way relieve the Contractor of performing all necessary work shown on the Drawings.

1.4 PROGRESS OF WORK

A. The Contractor shall order the progress of his work so as to conform to the progress of the work of other trades and shall complete the entire installation as soon as the conditions of the building will permit. Any cost resulting from the defective or ill-timed work performed under this section shall be borne by the Contractor.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Ship and store all products and materials in a manner which will protect them from damage, weather and entry of debris. If items are damaged, do not install, but take immediate steps to obtain replacement or repair. Any such repairs shall be subject to review and acceptance of the Engineer.

B. Delivery of Materials: Deliver materials (except bulk materials) in manufacturer's unopened container fully identified with manufacturer's name, trade name, type, class, grade, size and color.

C. Storage of Materials, Equipment and Fixtures: Store materials suitably sheltered from the elements, but readily accessible for inspection by the Engineer until installed. Store all items subject to moisture damage in dry, heated spaces.

1.6 EQUIPMENT ACCESSORIES

A. Provide supports, hangers and auxiliary structural members required for support of the work.

B. Furnish and set all sleeves for passage of raceways through structural, masonry and concrete walls and floors and elsewhere as will be required for the proper protection of each raceway and passing through building surfaces.

C. Wall mounted equipment, total weight of 100 pounds or less, may be directly secured to wall by means of steel bolts. Maintain at least 1" air space between equipment and supporting wall. Groups or arrays of equipment, with total weight of more than 100 pounds, shall be mounted on adequately free standing sized steel angles, channels, or bars. Prefabricated steel channels providing a high degree of mounting flexibility, such as those manufactured by Kindorf, Globe-Strutt and Unistrut, may be used for mounting arrays of equipment.

1.7 CUTTING, PATCHING, ETC.

A. The work shall be carefully laid out in advance. Where Cutting, channeling, chasing or drilling of floors, walls, partitions, ceilings or other surfaces is necessary for the proper installation, support or anchorage of raceway, outlets or other equipment, the work shall be carefully done. Any damage to the building, piping, equipment or defaced finish plaster, woodwork, metalwork, etc. shall be repaired by skilled mechanics of the trades involved at no additional cost to the Owner.

B. The Contractor shall do no cutting, channeling, chasing or drilling of unfinished masonry, tile, etc., unless he first obtains permission from the Engineer. If permission is granted, the Contractor shall perform this work in a manner approved by the Engineer.

C. Where conduits, outlet, junction, or pull boxes are mounted on a painted surface, or a surface to be painted, they shall be painted to match the surface. Whenever support channels are cut, the bare metal shall be cold galvanized.

D. Slots, chases, openings and recesses through floors, walls, ceilings, and roofs will be provided by the various trades in their respective materials. The trade requiring them to properly locate such openings and be responsible for any cutting and patching caused by the neglect to do so.

1.8 MOUNTING HEIGHTS

A. Unless otherwise noted, mounting heights for equipment and wiring devices shall be as shown as noted on the drawings.

1.9 CLEANING UP

A. Contractor shall take care to avoid accumulation of debris, boxes, crates, etc. resulting from the installation of work. Contractor shall remove from the premises each day all debris, boxes, etc., and keep the premises clean, subject to the Architect's instructions, which shall be promptly carried out.

B. Contractor shall clean all fixtures and equipment at the completion of the project.

1.10 PRODUCTS

A. If products and materials are specified or indicated on the drawings for a specific item or system, use those products or materials. Where noted in other sections of this specification, equipment has been specified for a specific performance and substitutions are not permitted. If products and materials are not listed in either of the above, use first class products and materials, subject to approval of Shop Drawings where Shop Drawings are required or as approved in writing where Shop Drawings are not required.

1.11 OMISSIONS FROM THE DRAWINGS

A. Should a Bidder find discrepancies in or omissions from the drawings or specifications or be in doubt as to their meaning, he shall notify the Architect before submitting his proposal. The Architect will in turn, send written instructions to all Bidders. Neither the Architect nor the Owner will be responsible for oral instructions. If the Contractor fails to comply with this requirement, he shall accept the Engineer's interpretations as to the intended meaning of the drawings and specifications.

1.12 EXECUTION

A. Follow manufacturer's instructions for installing, connecting, and adjusting all equipment. Provide one copy of such instructions to the Architect before installing any equipment. Provide a copy of such instructions at the equipment during any work on the equipment. Provide all special supports, connections, wiring, accessories, etc.

B. Use mechanics skilled in their trade for all work.

C. Clean all items before and after installation. Clean up all debris.

D. Perform all tests required by local authorities in addition to tests specified herein, such as life safety systems.

E. Applicable equipment and materials to be listed by Underwriters' Laboratories and manufactured in accordance with ASME, NEMA, ANSI or IEEE standards and as approved by local authorities having jurisdiction.

F. Before commencing work, examine all adjoining, underlying, etc., work on which this work is in any way dependent for perfect workmanship and report any condition which prevents performance of first class work. Become thoroughly familiar with actual existing conditions to which connections must be made or which must be changed or altered.

1.13 VERIFICATION OF ELECTRICAL REQUIREMENTS FOR EQUIPMENT FURNISHED BY OTHERS

A. Prior to the installation of wiring systems for any equipment furnished by others, this contractor shall verify that the electrical requirements of the equipment match those shown on the electrical drawings by examining the approved shop drawings of that equipment. Any discrepancies shall be immediately reported to the engineer.

B. If the contractor fails to comply with this requirement, he shall be responsible for any additional costs incurred at no additional cost to the Owner.

1.14 PROTECTION OF BUILDING FIRE/SMOKE BARRIERS

A. Passages of conduit through fire barriers and/or smoke barriers shall be protected as follows:

1. The space between the penetrating item and the fire barrier and/or smoke barrier shall be filled with a material capable of maintaining the fire/smoke resistance of the barrier or be protected by an approved device designed for the specific purpose.
2. Where the penetrating item uses a sleeve to penetrate the fire and/or smoke barrier the sleeve shall be solidly set in the fire/smoke barrier and the space between the item and the sleeve shall be filled as described above.
3. Fire barriers shall include 1-hour, 2-hour, and 3-hour rated floors and walls. Refer to architectural plans for location of fire barriers and smoke barriers and provide protection required to maintain ratings in accordance with all codes.
4. Approved fill material for fire barriers shall be packed mineral wool, with ASTME-136 rating and 3M Fire Barrier caulk. Coordinate sealing of all openings with requirements of Division 7 of this specification.
5. Perform work in accordance with the appropriate UL Ratings.
6. Product Data: Provide manufacturer's specifications, recommendations and installation instructions for each application.

1.15 CODES AND FEES

COMMON WORK RESULTS

FOR ELECTRICAL

A. General: Comply with Codes in accordance with the Contract Documents.

B. The electrical installation shall be in compliance with the requirements of OSHA, NEC and the rules, regulations and requirements of the power company supplying power to the building.

C. The electrical installation shall comply fully with all township, county and state laws, ordinances and regulations applicable with electrical installations.

D. All equipment shall be equal to or exceed the minimum requirements of NEMA, IEEE and UL.

E. Should any change in Drawings or Specifications be required to comply with governmental regulations, the Contractor shall notify Architects prior to execution of the work. The work shall be carried out according to the requirements of such code in accordance with the instruction of the Architect and at no additional cost to the Owner.

F. The local fees and permits and services of inspection authorities shall be obtained and paid for by the Contractor. The Contractor shall cooperate fully with local utility companies with respect to their services.

G. Certificate of Inspection and approval shall be procured and paid for by this Contractor from an approved certified inspection agency.

1.16 GUARANTEE

A. General: Provide a Guarantee in accordance with the Contract Documents.

B. Submit a single guarantee stating that all portions of the work are in accordance with Contract requirements. Guarantee all work against faulty and improper material and workmanship for a period of one (1) year from date of final acceptance by the Owner, except that where guarantees or warranties for longer terms are specified herein, such longer term to apply. Within 24 hours after notification, correct any deficiencies which occur during the guarantee period at no additional cost to Owner, all to the satisfaction of the Owner and Architect. Obtain similar guarantees from subcontractors, manufacturers, suppliers and subtrade specialists.

1.17 DISPOSAL

A. All electrical items not designated by the Owner for his use to be properly disposed of according to local, state and Federal regulations.

B. Items containing polychlorinated biphenyl (PCB) to be removed, transported and disposed of according to Federal Toxic Substances Control Act (TSCA). Contractor to submit certification that these items have been properly disposed.

END OF SECTION 260500

COMMON WORK RESULTS
FOR ELECTRICAL

SECTION 260519

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary conditions and Division 1 Specification Section, apply to this Section.

1.2 SUMMARY

A. General: Provide 600 volt wire and cable in accordance with the Contract Documents.

1.3 STANDARDS

A. Except as modified by governing codes and by the Contract Documents, comply with the latest applicable provisions and latest recommendations of the following:

1. Underwriters Laboratory Standard No. UL 467
   a. ASTM
   b. IPECA
2. Terminal Blocks
   a. UL-1059

PART 2 - PRODUCTS

2.1 WIRE AND CABLE

A. General

1. Provide wire with a minimum insulating rating of 600 volts, except for wire used in 50 volts or below applications for control of signal systems use 300 volt minimum or 600 volt where permitted to be incorporated with other wiring systems.

B. Conductor

1. Electrical grade, annealed copper fabricated in accordance with ASTM standards. Minimum size number 12 for branch circuits; number 14 for control wiring.
2. The conductors shown on the drawings are copper, except as noted otherwise.

C. Stranding and Number of Conductors

POWER CONDUCTORS AND CABLES Number 12 and number 10 solid.

1. Cables larger than number 10, stranded in accordance with ASTM Class B stranding designations.
2. Control wires stranded in accordance with ASTM Class B stranding designations.
3. Cables, multi-conductor unless otherwise noted for low tension systems.

D. Insulation

1. Type THWN/THHN insulation suitable for use in wet locations up to 75 degrees Centigrade. Use for lighting, receptacle and motor circuits and for panel and equipment feeders.

2.2 CONNECTORS

A. Make connections, splices, taps and joints with solderless devices, mechanically and electrically secure. Protect exposed wires and connecting devices with electrical tape or insulation to provide not less than that of the conductor.

B. Branch Circuit wires (Number 10 and smaller): Use any of the following types of terminals and connecting devices:

1. Hand Applied
   a. Coiled tapered, spring wound devices with a conducting corrosion-resistant coating over the spring steel and a plastic cover and skirt providing full insulation for splice and wired ends. Screw connector on by hand.
2. Tool Applied
   a. Steel cap, with conduction and corrosion resistant metallic plating, open at both ends, fitted around the twisted ends of the wire and compressed or crimped by means of a special die designed for the purpose. Specifically fitted plastic or rubber insulating cover wrap over each connector.

2.3 ELECTRICAL TAPE

A. Specifically designed for use as insulating tape.

2.4 LUBRICANT

A. Use lubricant only where the possibility of damage to conductors exists. Use only a lubricant approved by the cable manufacturer and one which is inert to cable and raceways.

PART 3 - EXECUTION

3.1 WIRE AND CABLE

New Security Vestibule

A. Provide a complete system of conductors in raceway system. Mount wiring through a specified raceway, regardless of voltage application.

B. Drawings do not indicate size of branch circuit wiring. For branch circuits whose length from panel to furthest outlet exceeds 100 feet for 120-volt circuits, use number 10 or larger.

C. Do not install wire in incomplete conduit runs nor until after the concrete work and plastering is completed and moisture is swabbed from conduits. Eliminate splices wherever possible. Where necessary, splice in readily accessible pull, junction, or outlet.

D. Provide cable supports for all vertical risers where required by code.

E. Use terminating fittings, connectors, etc., of a type suitable for the specified cable furnished. Make bends in cable at termination prior to installing compression device. Make fittings tight.

F. Extend wire sizing for the entire length of a circuit, feeder, etc. unless specifically noted otherwise.

G. Provide a separate neutral conductor for each branch circuit. In the event a common neutral conductor is used, such as in furniture systems, the circuit breaker in the panelboard must be common trip for each phase that uses one neutral conductor.

END OF SECTION 260519

SECTION 260533

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. General: Provide raceways in accordance with the Contract Documents.

1.2 STANDARDS

A. Except as modified by governing codes and by the Contract Documents, comply with the latest applicable provisions and latest recommendations of the following:
   1. Electrical Metallic Tubing – EMT
      a. UL Standard UL-797
      b. ANSI C80-3
      c. Federal Specification WW-C-563
   2. Flexible Metal Conduit – FMC
      a. UL Standard UL-1
   3. Metal Clad Cable – MC
      a. UL Standard 1581
      b. Federal Spec J-C-30B

PART 2 - PRODUCTS

2.1 RACEWAY TYPES

A. Electric Metallic Tubing – EMT

   1. Continuous, seamless tubing galvanized or sheradized on the exterior coated on the interior with a smooth hard finish of lacquer, varnish or enamel.
   2. All couplings, connectors, etc., used in conjunction with this raceway which are 2 inch in size and smaller shall be watertight compression type. EMT fittings shall be malleable iron zinc coated. With conduits of 2-1/2 inch in size and larger, set screw type couplings are permitted.

B. Flexible Metal Conduit – FMC

   1. Single strip, continuous, flexible interlocked double-wrapped steel, galvanized inside and outside forming smooth internal wiring channel.
   2. Maximum length: 6 feet.
   3. Each section of raceway must contain a bonding wire bonded at each end and sized as required. Provide connectors with insulating bushings.

C. Metal Clad Cable – MC

Non Health Care

1. Type MC cable shall be armored galvanized steel sheath cable with copper conductors and THHN 90 º insulation. Furnish with insulated grounding conductor.

2.2 OUTLET, JUNCTION AND PULLBOXES

A. Provide zinc-coated or cadmium-plated sheet steel outlet boxes not less than 4 inches octagonal or square, unless otherwise noted. Equip fixture outlet boxes with 3/8 inch no-bolt fixture studs where required. Where fixtures are mounted on or in an accessible type ceiling, provide a junction box and extend flexible conduit to each fixture. Fit outlet boxes in finished ceilings or walls with appropriate covers, set flush with the finished surface. Where more than one switch or device is located at one point, use gang boxes and covers unless otherwise indicated. Sectional switch boxes or utility boxes will not be permitted. Provide Series "GW" (Steel City) tile box, or as accepted, or a 4 inch square box with tile ring in masonry walls which will not be plastered or furred. Where drywall material is utilized, provide plaster ring. Provide outlet boxes of the type and size suitable for the specific application. Where outlet boxes contain two or more 277 volt devices, or where devices occur of different applied voltages, or where normal and emergency devices occur in same box, provide suitable barrier.

B. Construct junction or pullboxes not over 150 cubic inches in size as standard outlet boxes, and those over 150 cubic inches the same as "cabinets" with screw covers of the same gauge metal.

C. Plug any open knockouts not utilized.

D. Provide surface mounted outlet and junction boxes in indoor locations where exposed to moisture and outdoor locations of cast metal with threaded hubs.

PART 3 - EXECUTION

3.1 APPLICATION OF RACEWAYS

A. The following applications must be adhered to except as otherwise required by Code. Raceway not conforming to this listing must be removed by this Contractor and replaced with the specified material at this Contractor's expense.

B. Raceway Types Application

Electrical Metallic Tubing EMT	Use in every instance except where another material is specified.
Flexible Metal Conduit – FMC	Use in dry areas for connections to lighting fixtures in hung ceilings, connections to equipment installed in removable panels of hung ceilings at all transformer or equipment raceway connections where sound and vibration isolation is required.

Metal-Clad Cable - MC	Use for branch circuit wiring above suspended ceilings or in metal stud walls. Cable shall not be run exposed. Home run wiring from panelboard to first outlet box shall be installed in conduit. MC cable not permitted for fire alarm wiring systems or emergency lighting.

3.2 RACEWAY SYSTEMS IN GENERAL

A. Provide raceways for all wiring systems unless noted otherwise. Minimum size 3/4 inch for home runs and 1 inch minimum for power distribution. Wiring of each type and system must be installed in separate raceways.

B. Locate raceways so that the strength of structural members is unaffected and they do not conflict with the services of other trades. Install 1 inch or larger raceways in or through structural members (beams, slabs, etc.) only when and in the manner accepted by the Architect. Draw up couplings and fittings full and tight. Protect threads from corrosion with one coat zinc chromate after installation.

C. Above Grade – Defined as the area above finished grade for a building exterior and above top surface of any slabs (or other concrete work) on grade for a building interior. Above-grade raceways to comply with the following:

1. Install raceways concealed except at surface cabinets and for motor and equipment connection in electrical and mechanical rooms. Install a minimum of 6 inches from flues, steam pipes, or other heated lines. Route raceways parallel or perpendicular to building lines with right-angle turns and symmetrical bends. Run embedded raceways in a direct line and, where possible, with long sweep bends and offsets. Provide sleeves in forms for new concrete walls, floor slabs and partitions for passage of raceways. Waterproof sleeved raceways where required.
2. Provide raceway expansion joints for exposed and concealed raceways with necessary bonding conductor at building expansion joints and between buildings or structures and where required to compensate for raceway or building thermal expansion and contraction.

D. Raceways in hung ceilings shall be run on and secured to slab or primary structural members of ceiling, not to lathing channels or T-bars or other elements which are the direct supports of the ceiling panels. Secure conduit firmly to steel by clips and fittings designed for that purpose. Install as high as possible, but not less than, 1-0" above hung ceilings.

E. Exposed raceways shall be run parallel or at right angles with building lines. Secure raceway clamps or supports to masonry materials by toggle bolts, expansion bolts, or steel inserts. Install raceway on steel construction with approved clamps which do not depend on friction or set-screw pressure alone.

F. Clear raceway of all obstructions and dirt prior to pulling in wires or cables. This shall be done with ball mandrel (diameter approximately 85% of conduit inside diameter) followed by close fitting wire brush and wad of felt or similar material. This assembly may be pulled in together with, but ahead of the cable being installed. All empty raceways shall be similarly cleaned. Clear any raceway which rejects ball mandrel.

G. Support less than 1 inch trade size horizontally run, raceways at intervals not greater than 7 feet. Support such raceways, 1 inch trade size or larger, at intervals no greater than 10 feet.

3.3 OUTLET, JUNCTION, AND PULLBOXES

A. Provide outlet, junction, and pullboxes as indicated on the Drawings and as required for the complete installation of the various electrical systems, and to facilitate proper pulling of wires and cables. J-boxes and pullboxes shall be sized per NEC minimum.

B. The exact location of outlets and equipment is governed by structural conditions and obstructions or other equipment items. When necessary, relocate outlets so that when fixtures or equipment are installed, they will be symmetrically located according to the room layout and will not interfere with other work or equipment. Verify final location of outlets, panels equipment, etc., with Architect.

C. Back-to-back outlets in the same wall or "thru-wall" type boxes are not permitted. Provide 12 inch (minimum) spacing for outlets shown on opposite sides of a common wall to minimize sound transmission.

END OF SECTION 260533

SECTION 281300

ACCESS CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes a security access system consisting of field-installed Controllers connected by a high-speed electronic data transmission network. The security access system shall have the following:

1. Access Control:

   a. Regulating access through doors.
   b. Anti-passback.
   c. Visitor assignment.
   d. Credential cards and readers.
   e. Monitoring of field-installed devices.
   f. Reporting.

1.2 SYSTEM DESCRIPTION

A. System shall consist of connections to existing Central Station, and field-installed Controllers, connected by a high-speed electronic data transmission network.

B. Network(s) connecting PCs and Controllers shall consist of one or more of the following:

1. Local area, IEEE 802.3 Fast Ethernet 10 BASE-T star topology network based on TCP/IP.

C. System Network Requirements:

1. Interconnect system components and provide automatic communication of status changes, commands, field-initiated interrupts, and other communications required for proper system operation.
2. Communication shall not require operator initiation or response, and shall return to normal after partial or total network interruption such as power loss or transient upset.
3. System shall automatically annunciate communication failures to the operator and identify the communication link that has experienced a partial or total failure.
4. Communications Controller may be used as an interface between the Central Station display systems and the field device network. Communications Controller shall provide functions required to attain the specified network communications performance.

D. Field equipment shall include Controllers, sensors, and controls. Controllers shall serve as an interface between the Central Station and sensors and controls. Data exchange between the Central Station and the Controllers shall include down-line transmission of commands,

software, and databases to Controllers. The up-line data exchange from the Controller to the Central Station shall include status data such as intrusion alarms, status reports, and entry-control records. Controllers are classified as alarm-annunciation or entry-control type.

E. Error Detection: A cyclic code error detection method shall be used between Controllers and the existing Central Station, which shall detect single- and double-bit errors, burst errors of eight bits or less, and at least 99 percent of all other multibit and burst error conditions. Interactive or product error detection codes alone will not be acceptable.

F. Door Hardware Interface: Coordinate with Division 08 Sections that specify door hardware required to be monitored or controlled by the security access system. The Controllers in this Section shall have electrical characteristics that match the signal and power requirements of door hardware. Integrate door hardware specified in Division 08 Sections to function with the controls and PC-based software and hardware in this Section.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include operating characteristics, furnished specialties, and accessories. Reference each product to a location on Drawings. Test and evaluation data presented in Product Data shall comply with SIA BIO-01.

B. Shop Drawings:

1. Diagrams for cable management system.
2. System labeling schedules, including electronic copy of labeling schedules that are part of the cable and asset identification system of the software specified in Parts 2 and 3.
3. Wiring Diagrams. Show typical wiring schematics including the following:

    a. Outlets, jacks, and jack assemblies.

C. Project planning documents as specified in Part 3.

D. Field quality-control test reports.

1. Operation and maintenance data.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70, "National Electrical Code."

C. Comply with SIA DC-01 and SIA DC-03.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with existing system requirements and manufacturer.

B. Controller Software:

1. Controllers shall operate as an autonomous intelligent processing unit. Controllers shall make decisions about access control, alarm monitoring, linking functions, and door locking schedules for its operation, independent of other system components. Controllers shall be part of a fully distributed processing control network. The portion of the database associated with a Controller and consisting of parameters, constraints, and the latest value or status of points connected to that Controller, shall be maintained in the Controller.
2. Functions: The following functions shall be fully implemented and operational within each Controller:

   a. Monitoring inputs.
   b. Controlling outputs.
   c. Automatically reporting alarms to the existing Central Station.
   d. Reporting of sensor and output status to existing Central Station on request.
   e. Maintaining real time, automatically updated by the existing Central Station at least once a day.
   f. Communicating with the existing Central Station.
   g. Executing Controller resident programs.
   h. Diagnosing.
   i. Downloading and uploading data to and from the existing Central Station.

3. Controller Operations at a Location:

   a. Location: Up to 64 Controllers connected to RS-485 communications loop. Globally operating I/O linking and anti-passback functions between Controllers within the same Location without central-station intervention. Linking and anti-passback shall remain fully functional within the same Location even when the Central Station is off line.
   b. In the event of communications failure between the Central Station and a Location, there shall be no degradation in operations at the Controllers at that Location. The Controllers at each Location shall be connected to a memory buffer with a capacity to store up to 10,000 events; there shall be no loss of transactions in system history files until the buffer overflows.
   c. Buffered events shall be handled in a first-in-first-out mode of operation.

4. Individual Controller Operation:

   a. Controllers shall transmit alarms, status changes, and other data to the Central Station when communications circuits are operable. If communications are not available, Controllers shall function in a stand-alone mode and operational data, including the status and alarm data normally transmitted to the Central Station,

shall be stored for later transmission to the Central Station. Storage capacity for the latest 1024 events shall be provided at each Controller.

b. Card-reader ports of a Controller shall be custom configurable for at least 120 different card-reader or keypad formats. Multiple reader or keypad formats may be used simultaneously at different Controllers or within the same Controller.

c. Controllers shall provide a response to card-readers or keypad entries in less than 0.25 seconds, regardless of system size.

d. Controllers that are reset, or powered up from a nonpowered state, shall automatically request a parameter download and reboot to its proper working state. This shall happen without any operator intervention.

e. Initial Startup: When Controllers are brought on-line, database parameters shall be automatically downloaded to them. After initial download is completed, only database changes shall be downloaded to each Controller.

f. Failure Mode: On failure for any reason, Controllers shall perform an orderly shutdown and force Controller outputs to a predetermined failure mode state, consistent with the failure modes shown and the associated control device.

g. Startup After Power Failure: After power is restored, startup software shall initiate self-test diagnostic routines, after which Controllers shall resume normal operation.

h. Startup After Controller Failure: On failure, if the database and application software are no longer resident, Controllers shall not restart, but shall remain in the failure mode until repaired. If database and application programs are resident, Controllers shall immediately resume operation. If not, software shall be restored automatically from the Central Station.

5. Communications Monitoring:

a. System shall monitor and report status of RS-485 communications loop of each Location.

b. Communication status window shall display which Controllers are currently communicating, a total count of missed polls since midnight, and which Controller last missed a poll.

c. Communication status window shall show the type of CPU, the type of I/O board, and the amount of RAM memory for each Controller.

6. Operating systems shall include a real-time clock function that maintains seconds, minutes, hours, day, date, and month. The real-time clock shall be automatically synchronized with the Central Station at least once a day to plus or minus 10 seconds. The time synchronization shall be automatic, without operator action and without requiring system shutdown.

C. PC-to-Controller Communications:

1. Central-station communications shall use the following:

a. Direct connection using serial ports of the PC.

b. TCP/IP LAN network interface cards.

2. Serial Port Configuration: Each serial port used for communications shall be individually configurable for "direct communications," "modem communications incoming and outgoing," or "modem communications incoming only"; or as an ASCII output port.

3. Multiport Communications Board: Use if more than two serial ports are needed.

   a. Expandable and modular design. Use a 4-, 8-, or 16-serial port configuration that is expandable to 32 or 64 serial ports.
   b. Connect the first board to an internal PCI bus adapter card.

4. Direct serial, TCP/IP, and dial-up communications shall be alike in the monitoring or control of system, except for the connection that must first be made to a dial-up Location.
5. TCP/IP network interface card shall have an option to set the poll frequency and message response time-out settings.
6. PC-to-Controller and Controller-to-Controller communications (direct, dial-up, or TCP/IP) shall use a polled-communication protocol that checks sum and acknowledges each message. All communications shall be verified and buffered and retransmitted if not acknowledged.

D. Controller-to-Controller Communications:

1. Controller-to-Controller Communications: RS-485, 4-wire, point-to-point, regenerative (repeater) communications network methodology.
2. RS-485 communications signal shall be regenerated at each Controller.

2.2 CONTROLLERS

A. Controllers: Intelligent peripheral control unit, complying with UL 294, that stores time, date, valid codes, access levels, and similar data downloaded from the existing Central Station for controlling its operation.

B. Subject to compliance with requirements in this Article, manufacturers may use multipurpose Controllers.

C. Entry-Control Controller:

1. Function: Provide local entry-control functions including one- and two-way communications with access-control devices such as card readers, biometric personal identity verification devices, door strikes, magnetic latches, and door operators.

   a. Operate as a stand-alone portal Controller using the downloaded database during periods of communication loss between the Controller and the field-device network.
   b. Accept information generated by the entry-control devices; automatically process this information to determine valid identification of the individual present at the portal:

      1) On authentication of the credentials or information presented, check privileges of the identified individual, allowing only those actions granted as privileges.
      2) Privileges shall include, but not be limited to, time of day control, day of week control, group control, and visitor escort control.

c. Maintain a date-, time-, and Location-stamped record of each transaction. A transaction is defined as any successful or unsuccessful attempt to gain access through a controlled portal by the presentation of credentials or other identifying information.

2. Inputs:

a. Data from entry-control devices; use this input to change modes between access and secure.
b. Database downloads and updates from the existing Central Station that include enrollment and privilege information.

3. Outputs:

a. Indicate success or failure of attempts to use entry-control devices and make comparisons of presented information with stored identification information.
b. Grant or deny entry by sending control signals to portal-control devices.
c. Maintain a date-, time-, and Location-stamped record of each transaction and transmit transaction records to the existing Central Station.
d. Door Prop Alarm: If a portal is held open for longer than 20 seconds, alarm sounds.

4. With power supplies sufficient to power at voltage and frequency required for field devices and portal-control devices.
5. Data Line Problems: For periods of loss of communications with Central Station, or when data transmission is degraded and generating continuous checksum errors, the Controller shall continue to control entry by accepting identifying information, making authentication decisions, checking privileges, and controlling portal-control devices.

a. Store up to 1000 transactions during periods of communication loss between the Controller and access-control devices for subsequent upload to the Central Station on restoration of communication.

6. Controller Power: NFPA 70, Class II power supply transformer, with 12- or 24-V ac secondary, backup battery and charger.

a. Backup Battery: Premium, valve-regulated, recombinant-sealed, lead-calcium battery; spill proof; with a full 1-year warranty and a pro rata 19-year warranty. With single-stage, constant-voltage-current, limited battery charger, comply with battery manufacturer's written instructions for battery terminal voltage and charging current recommendations for maximum battery life.
b. Backup Power Supply Capacity: 90 minutes of battery supply. Submit battery and charger calculations.
c. Power Monitoring: Provide manual dynamic battery load test, initiated and monitored at the control center; with automatic disconnection of the Controller when battery voltage drops below Controller limits. Report by using local Controller-mounted LEDs and by communicating status to Central Station. Indicate normal power on and battery charger on trickle charge. Indicate and report the following:

1) Trouble Alarm: Normal power off load assumed by battery.

2) Trouble Alarm: Low battery.
3) Alarm: Power off.

2.3 CARD READERS

A. Power: Card reader shall be powered from its associated Controller, including its standby power source.

B. Response Time: Card reader shall respond to passage requests by generating a signal that is sent to the Controller. Response time shall be 800 ms or less, from the time the card reader finishes reading the credential card until a response signal is generated.

C. Enclosure: Suitable for surface, semiflush, or pedestal mounting. Mounting types shall additionally be suitable for installation in the following locations:

1. Indoors, controlled environment.
2. Indoors, uncontrolled environment.
3. Outdoors, with built-in heaters or other cold-weather equipment to extend the operating temperature range as needed for operation at the site.

D. Display: LED or other type of visual indicator display shall provide visual status indications and user prompts. Indicate power on/off, whether user passage requests have been accepted or rejected, and whether the door is locked or unlocked.

E. Touch Plate and Proximity Readers:

1. Active detection proximity card readers shall provide power to compatible credential cards through magnetic induction, and shall receive and decode a unique identification code number transmitted from the credential card.
2. Passive detection proximity card readers shall use a swept-frequency, RF field generator to read the resonant frequencies of tuned circuits laminated into compatible credential cards. The resonant frequencies read shall constitute a unique identification code number.
3. The card reader shall read proximity cards in a range from contact with to at least 6 inches (150 mm) from the reader.

2.4 DOOR AND GATE HARDWARE INTERFACE

A. Exit Device with Alarm: Operation of the exit device shall generate an alarm and annunciate a local alarm. Exit device and alarm contacts are specified in Division 08 Section "Door Hardware."

B. Electric Door Strikes: Use end-of-line resistors to provide power line supervision. Signal switches shall transmit data to Controller to indicate when the bolt is not engaged and the strike mechanism is unlocked, and shall report a forced entry. Power and signal shall be from the Controller. Electric strikes are specified in Division 08 Section "Door Hardware."

C. Electromagnetic Locks: End-of-line resistors shall provide power line supervision. Lock status sensing signal shall positively indicate door is secure. Power and signal shall be from the Controller. Electromagnetic locks are specified in Division 08 Section "Door Hardware."

2.5 TRANSFORMERS

A. NFPA 70, Class II control transformers, NRTL listed. Transformers for security access-control system shall not be shared with any other system.

2.6 CABLE AND ASSET MANAGEMENT

A. Manufacturers:

1. IMAP Textron; Division of Greenlee Textron.
2. Total Wire Software Company, Inc.

B. Computer-based cable and asset management system, with fully integrated database and graphic capabilities, complying with requirements in TIA/EIA-606.

1. Document physical characteristics by recording the network, asset, user, TIA/EAI details, device configurations, and exact connections between equipment and cabling.

   a. Manage the physical layer of security system.
   b. List device configurations.
   c. List and display circuit connections.
   d. Record firestopping data.
   e. Record grounding and bonding connections and test data.

2. Information shall be presented in database view, schematic plans, or technical drawings.

   a. Microsoft Visio Technical Drawing shall be used as drawing and schematic plans software. Drawing symbols, system layout, and design shall comply with SIA AG-01.

3. System shall interface with the following testing and recording devices:

   a. Direct upload tests from circuit testing instrument into the PC.
   b. Direct download circuit labeling into labeling printer.

C. Software shall be designed for Microsoft Windows of same version as security access system's Central Station shall be installed on the designated PC, using a hard drive dedicated only to this management function. Hard-drive capacity shall be not less than [50] <Insert number> GB.

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with recommendations in SIA CP-01.

B. Comply with EIA/TIA-606, "Administration Standard for the Telecommunications Infrastructure of Commercial Buildings."

C. Obtain detailed Project planning forms from manufacturer of access-control system; develop custom forms to suit Project. Fill in all data available from Project plans and specifications and publish as Project planning documents for review and approval.

1. Record setup data for control station.
2. For each Location, record setup of Controller features and access requirements.
3. Propose start and stop times for time zones and holidays, and match up access levels for doors.
4. Set up groups, facility codes, linking, and list inputs and outputs for each Controller.
5. Assign action message names and compose messages.
6. Set up alarms. Establish interlocks between alarms, intruder detection, and video surveillance features.
7. Prepare and install alarm graphic maps.
8. Develop user-defined fields.
9. Develop screen layout formats.
10. Propose setups for guard tours and key control.
11. Discuss badge layout options; design badges.
12. Complete system diagnostics and operation verification.
13. Prepare a specific plan for system testing, startup, and demonstration.
14. Develop acceptance test concept and, on approval, develop specifics of the test.
15. Develop cable and asset management system details; input data from construction documents. Include system schematics and Visio Technical Drawings.

D. In meetings with Architect and Owner, present Project planning documents and review, adjust, and prepare final setup documents. Use final documents to set up system software.

3.2 CABLING

A. Comply with NECA 1, "Good Workmanship in Electrical Contracting."

B. Install cables and wiring according to requirements in Division 28 Section "Conductors and Cables for Electronic Safety and Security."

C. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters. Conceal raceway and wiring except in unfinished spaces.

D. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Use NRTL-listed plenum cable in environmental air spaces, including plenum ceilings. Conceal raceway and cables except in unfinished spaces.

E. Install LAN cables using techniques, practices, and methods that are consistent with Category 5E rating of components and that ensure Category 5E performance of completed and linked signal paths, end to end.

F. Install cables without damaging conductors, shield, or jacket.

G. Boxes and enclosures containing security system components or cabling, and which are easily accessible to employees or to the public, shall be provided with a lock. Boxes above ceiling level in occupied areas of the building shall not be considered to be accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public shall be covered with a suitable cover plate and secured with tamperproof screws.

H. Install end-of-line resistors at the field device location and not at the Controller or panel location.

3.3 CABLE APPLICATION

A. Comply with EIA/TIA-569, "Commercial Building Standard for Telecommunications Pathways and Spaces."

B. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.

C. RS-485 Cabling: Install at a maximum distance of 4000 feet (1220 m).

D. Card Readers and Keypads:

1. Install number of conductor pairs recommended by manufacturer for the functions specified.
2. Unless manufacturer recommends larger conductors, install No. 22 AWG wire if maximum distance from Controller to the reader is 250 feet (75 m), and install No. 20 AWG wire if maximum distance is 500 feet (150 m).
3. For greater distances, install "extender" or "repeater" modules recommended by manufacturer of the Controller.
4. Install minimum No. 18 AWG shielded cable to readers and keypads that draw 50 mA or more.

E. Install minimum No. 16 AWG cable from Controller to electrically powered locks. Do not exceed 250 feet (75 m).

F. Install minimum No. 18 AWG ac power wire from transformer to Controller, with a maximum distance of 25 feet (8 m).

3.4 GROUNDING

A. Comply with Division 26 Section "Grounding and Bonding for Electrical Systems."

B. Comply with IEEE 1100, "Power and Grounding Sensitive Electronic Equipment."

C. Ground cable shields, drain conductors, and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

D. Bond shields and drain conductors to ground at only one point in each circuit.

E. Signal Ground:

1. Terminal: Locate in each equipment room and wiring closet; isolate from power system and equipment grounding.
2. Bus: Mount on wall of main equipment room with standoff insulators.
3. Backbone Cable: Extend from signal ground bus to signal ground terminal in each equipment room and wiring closet.

3.5 INSTALLATION

A. Push Buttons: Where multiple push buttons are housed within a single switch enclosure, they shall be stacked vertically with each push-button switch labeled with 1/4-inch- (6.4-mm-) high text and symbols as required. Push-button switches shall be connected to the Controller associated with the portal to which they are applied, and shall operate the appropriate electric strike, electric bolt, or other facility release device.

B. Install card, fob, and biometric readers.

3.6 IDENTIFICATION

A. In addition to requirements in this Article, comply with applicable requirements in Division 26 Section "Identification for Electrical Systems" and with TIA/EIA-606.

B. Using cable and asset management software specified in Part 2, develop Cable Administration Drawings for system identification, testing, and management. Use unique, alphanumeric designation for each cable, and label cable and jacks, connectors, and terminals to which it connects with same designation. Use logical and systematic designations for facility's architectural arrangement.

C. Label each terminal strip and screw terminal in each cabinet, rack, or panel.

1. All wiring conductors connected to terminal strips shall be individually numbered, and each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with the name and number of the particular device as shown.
2. Each wire connected to building-mounted devices is not required to be numbered at the device if the color of the wire is consistent with the associated wire connected and numbered within the panel or cabinet.

D. At completion, cable and asset management software shall reflect as-built conditions.

3.7 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:

1. LAN Cable Procedures: Inspect for physical damage and test each conductor signal path for continuity and shorts. Use Class 2, bidirectional, Category 5 tester. Test for faulty

connectors, splices, and terminations. Test according to TIA/EIA-568-1, "Commercial Building Telecommunications Cabling Standards - Part 1 General Requirements." Link performance for UTP cables must comply with minimum criteria in TIA/EIA-568-B.

2. Test each circuit and component of each system. Tests shall include, but are not limited to, measurements of power supply output under maximum load, signal loop resistance, and leakage to ground where applicable. System components with battery backup shall be operated on battery power for a period of not less than 10 percent of the calculated battery operating time. Provide special equipment and software if testing requires special or dedicated equipment.
3. Operational Test: After installation of cables and connectors, demonstrate product capability and compliance with requirements. Test each signal path for end-to-end performance from each end of all pairs installed. Remove temporary connections when tests have been satisfactorily completed.

3.8 STARTUP SERVICE

A. Engage a factory-authorized service representative to supervise and assist with startup service. Complete installation and startup checks according to approved procedures that were developed in " Preparation" Article and with manufacturer's written instructions.

1. Enroll and prepare badges and access cards for Owner's operators, management, and security personnel.

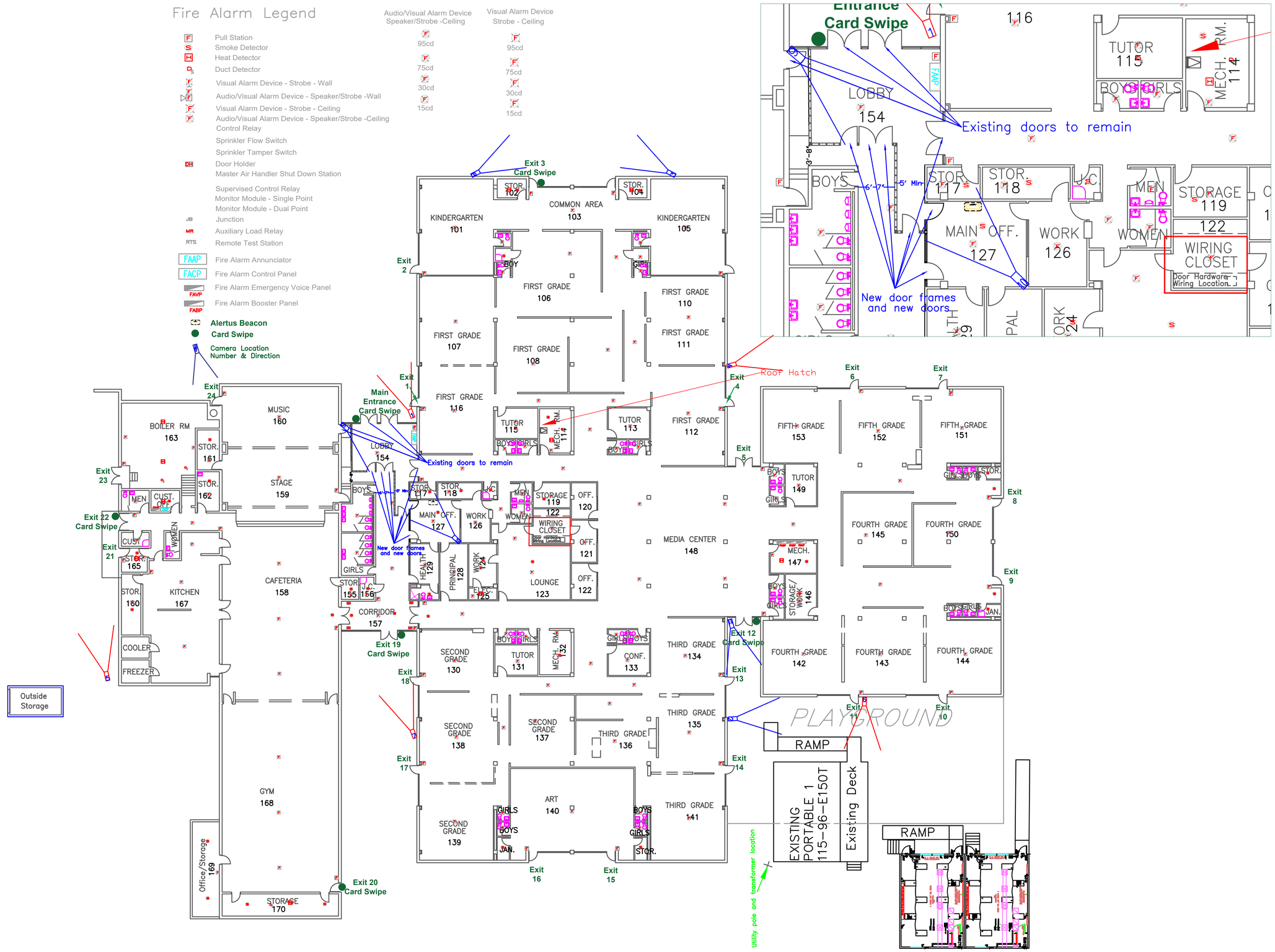
3.9 PROTECTION

A. Maintain strict security during the installation of equipment and software. Room housing the control station that has been powered up shall be locked and secured, with an activated burglar alarm and access-control system reporting to a Central Station complying with UL 1610, "Central-Station Burglar-Alarm Units," during periods when a qualified operator in the employ of Contractor is not present.

END OF SECTION 281300

Fire Alarm Legend

Symbol	Description	Audio/Visual Alarm Device Speaker/Strobe -Ceiling	Visual Alarm Device Strobe - Ceiling
F	Pull Station		
S	Smoke Detector		
H	Heat Detector		
D_S	Duct Detector		
F	Visual Alarm Device - Strobe - Wall		
F	Audio/Visual Alarm Device - Speaker/Strobe -Wall	95cd	95cd
F	Visual Alarm Device - Strobe - Ceiling	75cd	75cd
F	Audio/Visual Alarm Device - Speaker/Strobe -Ceiling	30cd	30cd
	Control Relay	15cd	15cd
	Sprinkler Flow Switch		
	Sprinkler Tamper Switch		
DH	Door Holder		
	Master Air Handler Shut Down Station		
	Supervised Control Relay		
	Monitor Module - Single Point		
	Monitor Module - Dual Point		
JB	Junction		
MR	Auxiliary Load Relay		
RTS	Remote Test Station		
FAAP	Fire Alarm Annunciator		
FACP	Fire Alarm Control Panel		
FAVP	Fire Alarm Emergency Voice Panel		
FABP	Fire Alarm Booster Panel		
	Alertus Beacon		
	Card Swipe		
	Camera Location Number & Direction		



General Notes

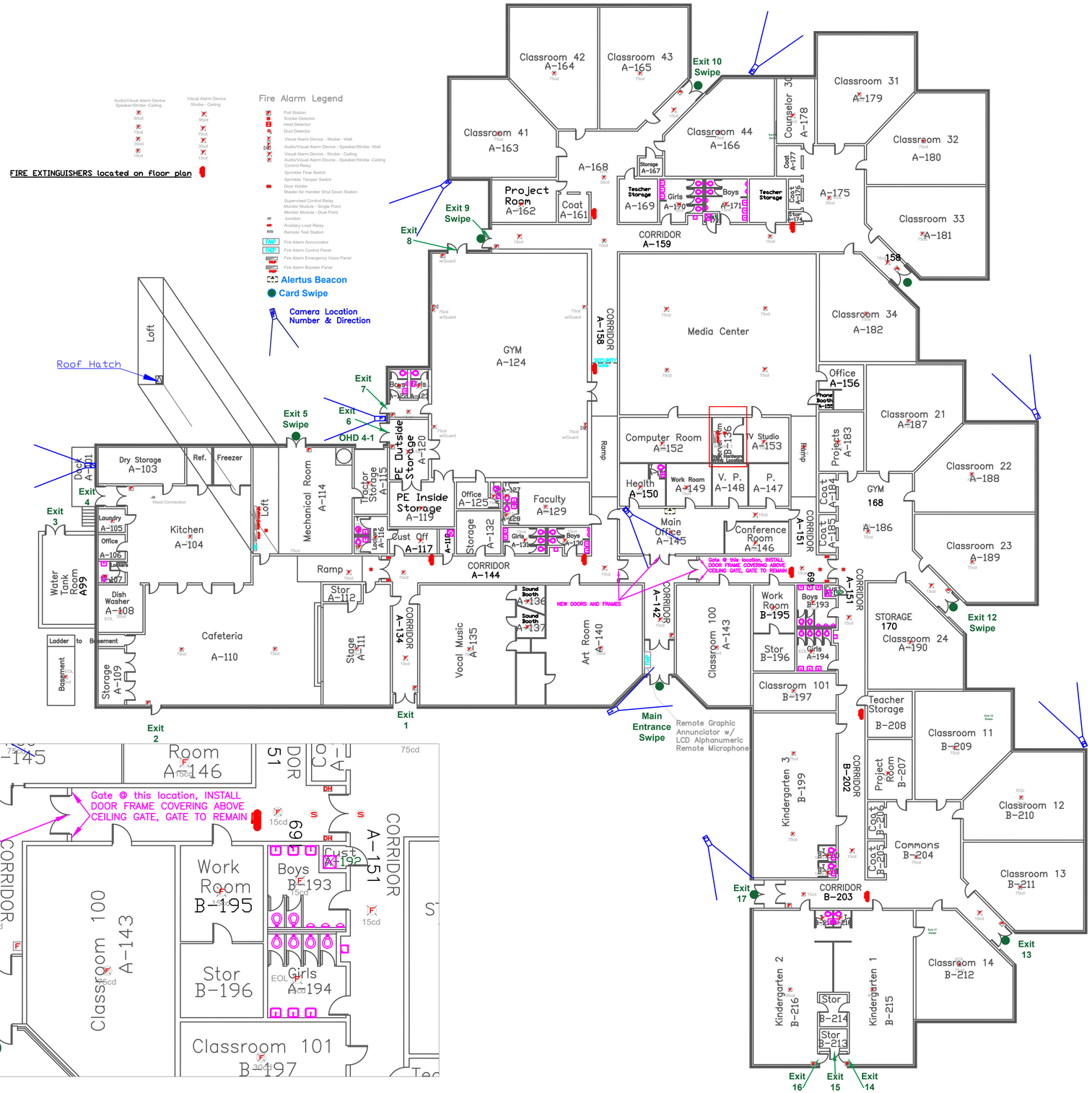
FCPS
Frederick County Public Schools
Reach. Challenge. Prepare.

No.	Revision/Issue	Date
2	Locate Door Electric Connection	5/20
1	Door & Hardware Changes	3/2020

Firm Name and Address
FREDERICK COUNTY PUBLIC SCHOOLS
OPERATIONS DIVISION
Capital Programs
FREDERICK, MARYLAND 21701-5918
PHONE 301-644-5176

Project Name and Address
Green Valley Elementary (Building)
11501 Fingerboard Road
Monrovia, MARYLAND 21770

Project: Security Vestibule
Date: 3/12/2020
Scale: 1/16" = 1'
Sheet: 1 of 4



General Notes

FCPS
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No.	Revision/Issue	Date
2	Door Electrical Connections	5/2020
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Firm Name and Address
FREDERICK COUNTY PUBLIC SCHOOLS
OPERATIONS DIVISION
Capital Programs
FREDERICK, MARYLAND 21701-5918
PHONE 301-644-5176

Project Name and Address
Kemptown Elementary (Building)
3456 Kemptown Church Road
Monrovia, MARYLAND 21770

Project: Security Vestibule
Date: 02/11/2020
Scale: 1/16" = 1'
Sheet: 1 of 3